

ON BRAZILIAN GRASSHOPPERS OF THE SUBFAMILIES
PYRGOMORPHINÆ AND LOCUSTINÆ (ACRIDINÆ OF
AUTHORS).

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The following study is based upon a series of one hundred and ninety-two specimens of Brazilian Pyrgomorphinæ and Locustinæ belonging chiefly to the collection of the United States National Museum. Fifty-three species are treated in the paper, of which seventeen are new, four new genera also being described in these pages.

Of the series studied by far the greater portion is from the collections made by Mr. H. H. Smith in the State of Matto Grosso and at Rio de Janeiro, while a smaller series, taken by Mr. A. Koebele in northeastern Brazil in the States of Pernambuco and Bahia, is even proportionately more interesting.

My acknowledgments are due the authorities of the National Museum for their kindness in permitting me to examine the museum material. My thanks are here given also to Mr. Morgan Hebard, from whose collection was received for study a portion of the series here treated.

Subfamily PYRGOMORPHINÆ.

Genus ALGETE Bolivar.

1905. *Algete* BOLIVAR, Boletín Real Soc. Esp. Hist. Nat., V, p. 213.

Type.—*A. brunneri* Bolivar.

ALGETE BRUNNERI Bolivar.

1905. *Algete brunneri* BOLIVAR, Boletín Real Soc. Esp. Hist. Nat., V, p. 214.
[Pernambuco, Brazil.]

Bonito, Pernambuco, Brazil, January 27, 1883. (A. Koebele.)
[U.S.N.M.] One mature male, one immature female.

The above listed specimens clearly belong to this very distinct form. One individual is labeled "on cotton."

Genus SPATHALIUM Bolivar.

1884. *Spathalium* BOLIVAR, Anales Soc. Esp. Hist. Nat., XIII, p. 30.

Included six congeneric species, of which the first, *S. sommeri* (Burmeister), can be considered the type.

SPATHALIUM CYANOPTERUM (Blanchard).

1836. *Ommexecha cyanopterum* BLANCHARD, Ann. Soc. Ent. France, V, p. 608, pl. XXI, figs. 1 and 2. [Chiquitos, Brazil, now in Bolivia.]

Chapada, Matto Grosso, Brazil. April, September, and November. (H. H. Smith.) Three females.

These specimens are slightly or considerably smaller than Blanchard's measurement (38 mm. in length), but appear to belong to this species.

The variation in size in the individuals in hand is considerable, the extremes in length of the body being 29 and 32 mm., in the length of the pronotum 7.5 and 8, and in the length of tegmen 21.2 and 25.

Genus OMURA Walker.^a

1870. *Omura* WALKER, Cat. Spec. Derm. Salt. Coll. Brit. Mus., III, p. 503.

Type.—*Omura congrua* Walker.

OMURA CONGRUA Walker.

1870. *Omura congrua* WALKER, Cat. Spec. Derm. Salt. Coll. Brit. Mus., III, p. 504. [Para, Brazil; Amazon Region; Archidona, Ecuador.]

Benevides. July [one] (H. H. Smith). One male, one female.

There appears to be little doubt that Walker was in error in describing his specimens of this species as males, as the measurement given, as well as characters in the generic description, are clearly those of the female.

Stål's *Protomachus depressus* is possibly distinct from Walker's species, the shape of the rostrum and the space between the metasternal foveolæ as described appearing different from true *congrua*. The species *depressus* was described from Peru, Bolivar also recording it from the Upper Amazon. In addition to the localities given above, a series of twenty-three specimens of *O. congrua* from Bartica, British Guiana, have been examined by the author.

Subfamily LOCUSTINÆ (ACRIDINÆ Authors).

Genus PROCOLPIA Stål.

PROCOLPIA MINOR Giglio-Tos.

Chapada, Matto Grosso. March and April. (H. H. Smith.) One male, one female.

^aThis name should replace *Protomachus* Stal. See Bolivar, Boletín Real Soc. Esp. Hist. Nat., V, p. 215.

These specimens are inseparable from Sapucay, Paraguay, individuals. The range of the species is here extended considerably to the northward, the type-locality, Colonia Risso, near the Rio Apa, northern Paraguay, having been the most northerly previous record.

Genus CORYACRIS, ^a new.

This new genus is closely allied to *Catreus* Stål, but differs in details best expressed in the diagnosis.

Fastigium somewhat produced, horizontal, sublanceolate, not deeply excavate; face regularly sloping without any marked division between line of fastigium and line of face; frontal costa sulcate; eyes prominent; antennæ depressed, slightly expanded proximad. Pronotum with the median carina straight, not appreciably elevated; lateral carinæ descending ventro-cephalad on the prozona. Tegmina elongate lanceolate, surpassing the abdomen. Prosternal spine compressed, slightly bulbous and distinctly retrorse distad; interspace between the mesosternal lobes distinctly longitudinal, between the metasternal lobes subquadrate to slightly transverse. Supranal plate of the male trigonal; cerci styliform; subgenital plate compressed, rostrate. Cephalic and median limbs rather robust, the femora appreciably inflated in the male. Caudal femora with the medio-dorsal portion of the genicular margin provided with a distinct spine, genicular lobes large; caudal tibiæ with an apical and nine other spines on the external margin, internal margin with ten spines.

Type of the genus.—*Coryacris diversipes*, new species.

CORYACRIS DIVERSIPES, new species.

Types.—Male and female; Corumbá, Matto Grosso, Brazil. Female in March on highland. (H. H. Smith.) Cat. No. 12081, U.S.N.M.

Size large; form rather slender in the male, slightly more robust in the female; surface of the pronotum and pleura impresso-punctate. Head with its dorsal length slightly more than half the dorsal length of the pronotum in the male, two-fifths the length of the same in the female; occiput very slightly arcuate, descending slightly in the interocular region, which is equal in width to about three-fourths that of the fastigium; surface of the fastigium subhorizontal, the lateral margins subarcuate when seen from the sides, when seen from the dorsum the apex of the fastigium is seen to be acute-angulate, the margins slightly bowed in both sexes and slightly blunter and the angle broader in the female than in the male, fastigio-facial junction rounded in the female but with a slight angle in the male, the line of the face distinctly but not greatly retreating in both sexes, more pronounced, however, in the male than in the female; frontal costa rather narrow, uniform,

^a *Κορυς*, signifying *helmet*; *ακρίς*, signifying *locust*.

subequal in width except for a slight infra-ocellar constriction in the male, sulcate throughout its length; lateral facial carinæ marked, slightly diverging ventrad in the male, decidedly arcuate divergent ventrad in the female; eyes quite prominent in the male, much less pronounced in the female, subovate, in length distinctly exceeding the infra-ocular portion of the genæ in the male, slightly exceeding the same in the female; antennæ slightly more than twice the length of the dorsum of the pronotum, joints moderately elongate, proximal joints slightly depressed, in consequence giving a faint subensiform appearance to the appendage. Pronotum with the greatest dorsal width contained one and one-half times in the length; cephalic margin of the disk with a broad and very blunt obtuse angulation, caudal margin obtuse-angulate in both sexes, the immediate angle having a distinct, though small, rounded emargination; median carina distinct, subequal in the male, slightly arcuate on the prozona in the female; disk of the metazona flattened,

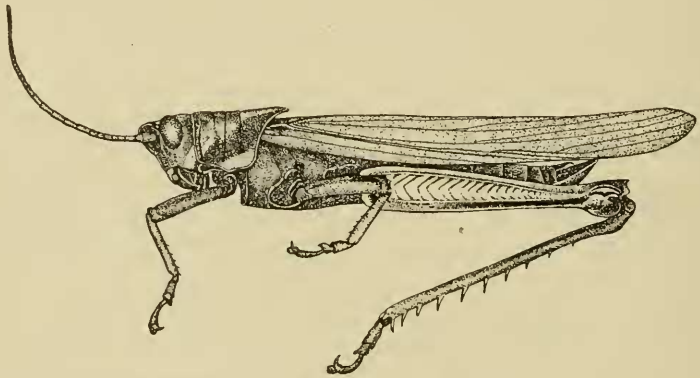


FIG. 1.—*CORYACRIS DIVERSIPES*. LATERAL VIEW OF MALE TYPE. (X 14)

of the prozona rounding into the lateral lobes, caudal transverse sulcus strongly impressed, the two cephalic transverse sulci marked but not cutting such a pronounced gap in the median carina as the caudal one; prozona and metazona subequal in length, the prozona very slightly longer in the male; lateral angles very distinct, parallel, and horizontal on the metazona, descending on the prozona in a curve to the ventro-cephalic angle, this portion of the lateral angles being much more pronounced in the male than in the female; lateral lobes with their dorsal length very greatly exceeding their depth, ventral margin sinuate obtuse-angulate, ventral angles rounded obtuse. Tegmina about three and a half (female) to four (male) times the length of the dorsum of the pronotum, acute lanceolate, the costal lobe more pronounced in the female than in the male, the distal fourth of the costal margin gently rounding to the acute apex, sutural margin straight with a slight oblique truncation near the apex; intercalary area irregularly reticulate. Wings very slightly shorter than the tegmina when in repose. Prosternal spine distinctly

compressed, slightly bulbous in the apical half, this being more pronounced in the female than in the male, retrorse, apex rather blunt; interspace between the mesosternal lobes strongly longitudinal in both sexes, that between the mesosternal lobes as broad as long and contracted caudad in the male, slightly transverse in the female. Supra-anal plate of the male acute-angulate, the margins slightly constricted halfway to the apex, a deeply impressed area like the inverted upper portion of an exclamation mark present proximomesad; cerci simple, styliform, very short; subgenital plate moderately full at the base, decidedly compressed distad, this portion being somewhat rostrate, strongly keeled dorsad, distinctly so ventrad, and narrowly rounded acute angulate when seen from the side, the sides of the body of the plate provided with a longitudinal cariniform fold extending two-thirds the length of the plate. Ovipositor jaws of the female robust, blunt, the margins of the dorsal pair not serrate. Cephalic and median limbs rather robust, the femora distinctly inflated in the male. Caudal femora about two-thirds the length of the tegmina, rather slender, tapering, carinæ unarmed except for a slight serrulation on the dorsal carina of the male, pagina with a moderately regular but poorly impressed pattern, genicular lobes strongly rounded; caudal tibiæ slightly shorter than the femora, spines of the internal margin longer than those of the external and both series ten in number.

General color in the female dull walnut brown, this shade covering the head, greater part of the pronotum and pleura, while in the male the pleura alone are colored with it. Tegmina bice green in both sexes, sprinkled with a number of minute olive spots near the apex. Cephalic and median limbs dull bice green in the male, very dull olive-green in the female, the femora in both sexes with rows of whitish spots and a median line of purplish lead color. Caudal femora buff-yellow in both sexes, the internal face with a number of oil green blotches along the carinæ, very distinct in the male, much less distinct and sub-obsolete in the female, carinæ of the lateral face with a number of very faint small green points, genicular arches and base of the lobes blackish brown; caudal tibiæ with the external face greenish yellow, marked at the base of each spine with bice green, dorsal face bice green, internal face yellowish with a green blotch at the base of each spine, the distal half of the internal margin lined with scarlet, the internal aspect of the tarsi colored with the same, spines blackish at the apex, the proximal halves of those on the external margin yellowish externally, greenish internally, those on the internal

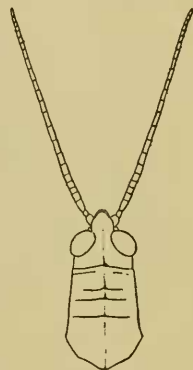


FIG. 2.—*CORYACRIS DIVERSIPES*. DORSAL OUTLINE OF HEAD AND PRONOTUM. ($\times 1\frac{1}{2}$)

margin washed with greenish, the colors on the tibiæ in the female being similar to those described above from the male but weaker and less sharply contrasted. Head of the male isabella color, the caudal portion of the genæ maize yellow; margins of the costa drab, eyes tawny-olive; antennæ becoming madder brown distad. Pronotum of the male saffron yellow in the middle of the dorsum, shading laterad to seal brown, this latter being ventrad of the lateral angles, a narrow area along the cephalic portion of the angles, some of the caudal margin of the lobes and a large patch covering the ventro-caudal portion of the lateral lobes maize yellow. This yellowish area is represented in the female by a narrow edging to the caudal margin of the lobes and a broken dull patch along the ventral portion of the same.

Measurements.

	Male.	Female.
	<i>mm.</i>	<i>mm.</i>
Length of body.....	40	59
Length of pronotum.....	8.5	13.5
Length of tegmen.....	37.5	49
Length of caudal femur.....	24.5	33.5

A female labeled Cuyaba, Matto Grosso, February, has also been examined. It is distinctly smaller than the female type with the area between the mesosternal lobes less strongly longitudinal, the caudal margin of the disk of the pronotum without the median emargination and the general color of the tegmina brighter.

Genus *ÆOLACRIS* Scudder.

1875. *Eolacris* SCUDDER, Proc. Boston Soc. Nat. Hist., XVII, p. 269.

Type.—*Xiphicera octomaculata* Scudder.

ÆOLACRIS BELLA, new species.

Type.—Male; Rio Purus, Brazil. March 15, 1901. (J. B. Steere.)
Cat. No. 12082, U.S.N.M.

Closely allied to *Eolacris octomaculata* Scudder from Napo or Marañon,^a but differing in the larger size, shorter fastigium, the distinct and nonconfluent tegminal spots, the longer spines on the caudal tibiæ and the coloration of the antennæ. No close relationship exists with *Eolacris caternaulti* Feisthamel from Cayenne, the remaining species of the genus.

Size large; form very considerably compressed; surface of the pronotum, pleura, venter and abdomen impresso-punctate. Head with the visible dorsal length very slightly more than half that of the pronotum; occiput subhorizontal, the interocular region broad,

^aProc. Bost. Soc. Nat. Hist., XII, p. 337.

being equal to two-thirds the fastigial length; fastigium prominent, slightly ascending, the dorsal length equal to the exposed portion of the occiput, when seen from the dorsum evenly tapering to near the apex which is very bluntly rounded, a distinct medio-longitudinal depression present in the distal half, when seen from the side the angle of the fastigium is acute-angulate with the immediate angle narrowly rounded; face strongly retreating to the ocellus, thence very slightly so; frontal costa continuous, distinct; sulcate throughout its length, greatly compressed at its junction with the fastigium, thence very gradually widening to the clypeal suture; lateral facial carinæ very prominent, slightly diverging ventrad; eyes very prominent, large, ovate in outline, the length about equal to that of the infra-ocular portion of the genæ; antennæ about twice the length of the head and pronotum, joints elongate, strongly depressed proximad and decidedly ensiform, tapering to the slender

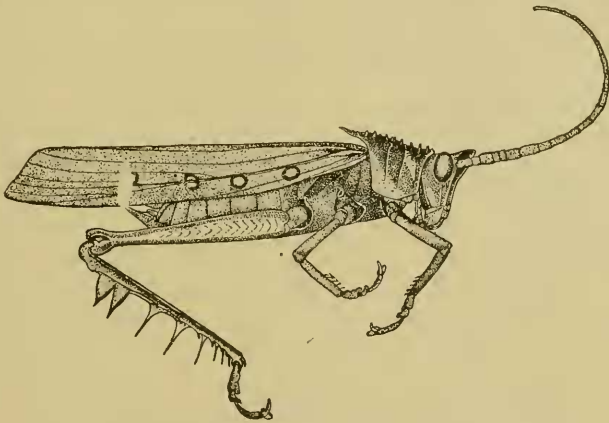


FIG. 3.—*EOLACRIS BELLA*. LATERAL VIEW OF TYPE. (X 1)

and moderately acute apex. Pronotum with the greatest dorsal width contained about twice in the length; cephalic margin arcuato-emarginate, caudal margin acute-angulate; median carina represented by a thread-like trace, the dorsum with a slight depression on the cephalic portion of the metazona, lateral angles inflated and covered with numerous blunt spiniform tubercles, the tubercles being present on the entire length of the angles but the distinctly inflated character is limited to the metazona; lateral lobes with the greatest length distinctly exceeding the depth, ventral angles obtuse, ventral margin broadly rounded obtuse-angulate, the prozonal portion of the lobes with a diagonal blunt ridge extending ventro-cephalad to the ventro-cephalic angle, ending in a small blunt tubercle. Tegmina exceeding the apex of the subgenital plate by about the length of the pronotum, elongate, subequal, the greatest width contained about five and one-half times in the length; costal margin distinctly

arcuate proximad and distad, the median portion very slightly arcuate, sutural margin straight, apex obliquely truncate with the angles narrowly (costal) or broadly (sutural) rounded; anal area very narrow. Wings large, the greatest width contained about one and four-fifths in the length; costal margin straight except for the distal third which is considerably arcuate, apex slightly acute-angulate with the immediate apex rounded, margin of the axillary lobe produced and rounded; posterior axillary area inflated, fenestrate, the cross veins regular, oblique proximad, becoming straighter distad; greater portion of the median area sub-fenestrate, the "panes" subquadrate, translucent and not hyaline as in the axillary area. Prosternal spine erect, slender, acute, the immediate apex rather blunt. Mesosternal lobes separated by a slightly longitudinal interspace which is somewhat narrower than one of the lobes; interspace between the metasternal lobes shallow, transverse, slightly broader than that between the mesosternal lobes. Abdomen compressed, the dorsum somewhat carinate; supra-anal plate acute trigonal with a deep, high margined medio-longitudinal impression; cerci short, simple, styliform; subgenital plate compressed, greatly produced, the apex being developed into an elongate spiniform process, medio-ventral section of the plate with an irregular carina. Cephalic and median limbs rather slender. Caudal femora about three-fifths the length of the tegmina, quite slender, tapering, genicular region rather large, genicular lobes rounded, prominent, pagina with a rather irregular "herring-bone" pattern, carina, particularly the dorsal one, weakly serrato-dentate; caudal tibiae almost equaling the femora in length, rather robust proximad and supplied with two compressed, lamellate, apically spiniform processes, lateral margin with seven short spines, one of which is



FIG. 4.—*ÆOLACRIS BELLA*. DORSAL OUTLINE OF HEAD AND PRONOTUM OF TYPE. (X 1)

apical, internal margin with the same number, the spines being very long, as long as the lamellate processes, proximad, slightly curved, decreasing in length distad, the terminal one being very small.

General color olive green, washed on the median and costal portions of the tegmina with very dull and faint wine purple. Head and pronotum with a gradually expanding medio-longitudinal bar of ochraceous-buff on the dorsum; margins of the fastigium, dorsad and caudad of the eyes and the lateral angles of the disk of the pronotum blackish brown; face ochraceous, the carinae lined with brown; a diagonal bar of dull buff extends ventro-cephalad over a portion of the prozonal area of the lateral lobes and the caudal portion of the genæ, remainder of the lateral lobes and the broad diagonal subequal bar of olive extending ventro-cephalad, ventro-

caudal section dull buff; eyes burnt umber; antennæ blackish, tipped with naples yellow. Pleura very dull buff, margined dorsad by a diagonal bar of blackish, the area immediately cephalad of the insertion of the median limbs of the same color. Tegmina with the anal area chromium green, the series of ocelliform spots found in this genus being in this species four in number, placed near the principal veins—numbering proximo-distad the first is subcircular and entirely on the costal side, the second is of similar form and slightly on the veins, the third is roughly ovate and with the greater portion on the discoidal field, the fourth is elongate elliptical or sub-linear and entirely discoidal, only touching the veins, the color of the spots is deep chrome, edged with blackish brown; anal vein very dark brown. Wings with disk cadmium yellow, becoming cadmium orange toward the periphery, fenestrate axillary area clear hyaline; marginal color blackish brown, the width of the band being about a third the length of the wing at the apex and gradually narrowing proximad to the merest edging. Abdomen and venter wood brown, the former becoming cinnamon-rufous toward the apex. Cephalic limbs olivaceous, tarsi dull red brown; median limbs vinaceous rufous. Caudal femora very dull bottle green, the genicular arches and lobes dull blackish brown; caudal tibiæ very dull liver brown, the spines orange-rufous touched with black.

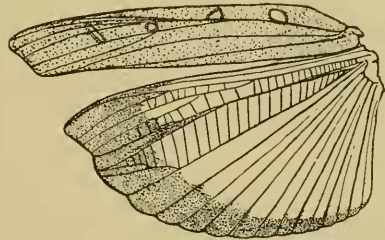


FIG. 5.—*AOLACRIS BELLA*. TEGMEN AND WING
(X 1)

Measurements.

	mm.
Length of body.....	49
Length of pronotum.....	11.5
Greatest dorsal width of pronotum.....	6
Length of tegmen.....	45.5
Greatest width of tegmen.....	8.1
Length of caudal femur.....	27.6

A paratype male has also been examined. It is slightly smaller than the type, while the inflation of the lateral angles of the pronotum is less pronounced. The color is more decidedly green and the yellows are purer with less of orange and buff in them.

Genus *PRIONOLOPHA* Stål.

PRIONOLOPHA SERRATA (Linnæus).

Surinam. (C. J. Hering.) Four females. Pará, State of Pará, Brazil. August. (H. H. Smith.) One male. Corumbá, Matto Grosso, Brazil. March (1), April (1). Highland (1). (H. H. Smith.) Two males, two females.

Genus TROPINOTUS Serville.

TROPINOTUS ANGULATUS Stål.

1873. *T[ropinotus] angulatus* STÅL, Öfv. Kong. Vet.-Akad. Förh., 1873, no. 4, p. 53. [Bahia.]

Bonito, Pernambuco, Brazil. February, 1880. (A. Koebele; collected on cotton.) One female. Chapada, Matto Grosso, Brazil. April (2). (H. H. Smith.) One male, two females. Corumbá, Matto Grosso, Brazil. March, highland. One female.

These specimens vary considerably in the length of the tegmina and wings, but all agree in the distinct angles to the lateral carinæ of the pronotum. The maculations of the tegmina are also variable in intensity and correspondingly in the presence or absence of those weakly indicated in the more varied form. In one specimen the proximal band alone is indicated distinctly and that by two maculations, a larger one in the discoidal area and a smaller one in the projection of the costal area. The distal bands are very faintly indicated in this specimen and chiefly by infuscations along the sutural margin.

TROPINOTUS ATTENUATUS, new species.

Types.—Male and female. Chapada, Matto Grosso, Brazil. September. (H. H. Smith.) Cat. No. 12083, U.S.N.M.

Closely allied to *T. gracilis* Bruner with a topotypic male of which the new species has been compared,^a and from which it differs in the slightly greater size, the more distinctly sulcate frontal costa, the shorter and blunter subgenital plate and in the lesser number of spines (twelve to fourteen) on the margins of the caudal tibiæ.

Size medium; form elongate, very slender. Head with its dorsal length contained slightly more (male) or less (female) than three times in the dorsal length of the pronotum; occiput very slightly arcuate, fastigium horizontal, a distinct median carina present on both; angles of the fastigium slightly acute, the margin slightly elevated, interspace between the eyes very slightly less than the greatest fastigial width; fastigio-facial angle moderately rounded, the face considerably retreating; frontal costa narrowed dorsad, subequal from between the antennæ to the clypeal suture in the male, very slightly expanding in the female, slightly but appreciably constricted at the ocellus, sulcate from between the antennæ to ventrad of the ocellus; lateral facial carinæ prominent, considerably diverging ventrad; eyes ovate, not very prominent, in length somewhat exceeding that of the infra-ocular portion of the genæ; antennæ about equal in length to the head and pronotum, depressed, sub-ensiform. Pronotum with the greatest width contained, more than twice in the

^a a São Paulo, Brazil, Sept. 14, 1900 (Hempel).

length; cephalic margin of the disk obtuse-angulate with the sides of the angles slightly arcuato-emarginate, caudal margin acute-angulate, very sharp in the male; median carina moderately elevated, gently arcuate cephalo-caudad in the female, in the male with the highest point at the middle of the metazona from which the

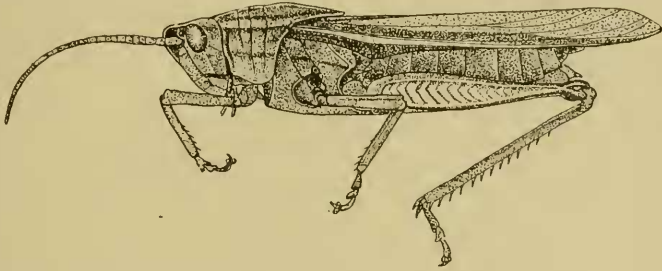


FIG. 6.—TROPINOTUS ATTENUATUS. LATERAL VIEW OF FEMALE TYPE. ($\times 1\frac{1}{2}$)

carina very gradually slopes cephalad and caudad, the three transverse sulci hardly breaking the line of the carina, metazona half again as long as the prozona; lateral angles very distinct, regularly but not greatly diverging caudad; lateral lobes with the dorsal length slightly greater than the depth, ventro-cephalic angle obtuse, ventro-caudal angle rounded rectangulate. Tegmina exceeding the apices of the

abdomen and of the caudal femora, about two and two-thirds times the length of the dorsum of the pronotum, rather narrow; costal lobe distinct, well rounded, remainder of the costal margin straight except toward the apex, where it is considerably arcuate, sutural margin straight, the apex narrowly rounded. Prosternal spine strongly compressed, decidedly retrorse at the apex, the tip slightly blunt; interspace between the mesosternal lobes narrow, decidedly longitudinal; interspace between the metasternal lobes small, slightly longitudinal in the male, subquadrate in the female. Subgenital plate of the male acute, compressed, with a slight ventral carina. Cephalic and median limbs slender. Caudal femora one and three-fourths (female) to one and four-fifths (male) times the length of the dorsum of the pronotum, rather slender, dorsal and ventral carina serrulate, pagina with the pattern moderately regular, genicular lobes acute; caudal tibiae distinctly but not greatly shorter than the femora, armed on the external margin with thirteen to fifteen spines, one of



FIG. 7.—TROPINOTUS ATTENUATUS. DORSAL OUTLINE OF HEAD AND PRONOTUM. ($\times 1\frac{1}{2}$)

which is apical, on the internal margin with twelve to thirteen spines, those of the internal margin being longer than those on the external margin and slightly curved.

General color ochraceous in the male, clay color in the female. Male with the dorsum of the pronotum and anal and discoidal fields

of the tegmina chestnut, blackish on the sides of the disk and along the principal group of tegminal veins; costal field of the tegmina pale oil green edged along the principal veins with a narrow line of buff. Female with the median portion of the disk of the pronotum cinnamon, sides of the same broccoli brown, the dividing line an irregular one of bistre; anal and costal areas of the tegmina, aside from a pale buff humeral line, prout's brown, the discoidal field pale cinnamon, clouded along the costal portion with prout's brown blotchings. A faint medio-longitudinal head stripe and equally faint postocular bars are present in both sexes; antennæ vandyke brown, narrowly edged with buff proximad, the distal half entirely russet in the male; eyes prout's brown in the male, tawny-olive in the female. Lateral angles of the pronotum edged ventrad with bistre (female) or vandyke brown (male), a faint longitudinal line of the same color crossing the lateral lobes slightly dorsad of the middle; crest edged with naples yellow. Tegmina with the distal two-thirds of the sutural margin weakly blotched with prout's brown, the discoidal and median veins with fine buffy dashes along their proximal portions. Venter pale ochraceous, the abdomen the same in the female, wood brown in the male with the segments edged and lined with blackish. Cephalic and median limbs of the general color somewhat lined and mottled with darker. Caudal femora of the general color suffused along the dorso-median and dorso-lateral carinæ and along the center of the pagina with prout's brown, genicular lobes the same; caudal tibiæ raw sienna in the male, dark clay color in the female, spines yellowish tipped with black.

Measurements.

	Male.	Female.
	<i>mm.</i>	<i>mm.</i>
Length of body	33.4	40
Length of pronotum	10.5	12.5
Length of tegmen	30.5	36.5
Length of caudal femur	19.5	22.7

A paratypic male taken in June and two paratypic females taken in July and September have been examined in addition to the types. In size these specimens agree very well with the type pair, but in color the tendency found in this genus to vary along certain lines is well exhibited. The July female has the lateral portions of the disk of the pronotum and costal area of the tegmina green, while the remainder of the dorsum is quite light. The paratypic September female has the green much the same but darker, while the rich ochraceous discoidal field is contrasted with the very dark brown anal field and humeral region. The additional male is colored much as the type female, but has the costal area green.

Genus COLPOLOPHA Stål.

COLPOLOPHA OBSOLETA (Serville).

1831. *Tropinotus obsoletus* SERVILLE, Ann. Sci. Nat., XXII, p. 274. ["Cap de Bonne-Espérance."]

Santarem, State of Para, Brazil. (H. H. Smith.) One male.

This specimen has been compared with an authentic female specimen from Cayenne received from the late Doctor Saussure.

Genus HELIONOTUS,^a new.

Allied to *Draconata* Pictet and Saussure^b from Colombia, but differing in the prozona being shorter than the metazona, the antennæ being twenty-one jointed, the tegmina attingent dorsad, the subgenital plate of the male acute, the caudal femora distinctly spinose on the dorsal carina. It is immediately separated from *Colpolopha* Stål by the strongly spinose lateral margins of the pronotum.

Fastigium with the dorsum horizontal, not sulcate; frontal costa precurent, constricted ventrad of the ocellus where the line of the face is slightly angulate; antennæ twenty-one jointed. Pronotum with the median carina cristate, ascending to the middle of the metazona, caudal section of the same acute spiniform; transverse sulci three in number, all deeply severing the median carina; lateral angles strongly tuberculate (female) or acute spiniform (male), projecting laterad. Tegmina very short, attingent (male) or overlapping (female), costal lobe very greatly developed; apex narrow, sinuato-truncate. Ovipositor jaws of female very blunt. Subgenital plate compressed, the tip rostrate. Caudal limbs with the angles and dorsal surfaces serrato-dentate; caudal tibiæ somewhat sinuate, external margin armed with nine or ten spines including the apical spine, internal margin with nine spines.

Type.—*Helionotus mirabilis*, new species.

HELIONOTUS MIRABILIS, new species.

Types.—Male and female. Bonito, Pernambuco, Brazil. January, 1883. (A. Koebele.) Cat. No. 12084, U.S.N.M.

Size medium (male) to large (female); form slightly compressed, moderately slender in the male, obese and fusiform in the female; surface of the thorax, except the venter, impresso-punctate, head and abdomen much smoother. Head with the dorsum a third (male) or less than a third (female) the length of the pronotum; occiput slightly arcuate, a very faint medio-longitudinal carina present; fastigium horizontal, blunt lanceolate in the male when seen from the dorsum, subtrigonal in the female, lateral margins slightly arcuate

^a Ἡλιος, signifying sun; νοτος, signifying back.

^b Mitth. Schweiz. Ent. Ges., VII., p. 341.

when seen from the side, the disk of the fastigium slightly depressed near the apex; interspace between the eyes equal to the greatest width of the fastigium; fastigio-facial angle rather narrowly rounded,

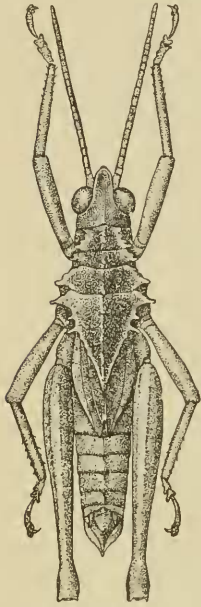


FIG. 8. HELIONOTUS MIRABILIS. DORSAL VIEW OF MALE TYPE. (X 2)

the line considerably (male) or very slightly (female) retreating, a slight angle between the line of the face and the line of the fastigium; frontal costa distinct, narrow and subequal from the apical constriction to immediately ventrad of the ocellus, where there is a decided constriction, thence the margins diverge slightly (male) or considerably (female) to the clypeal suture, the costa distinctly but shallowly sulcate throughout its length; supplementary facial carinae distinct, following in their direction, but in a more pronounced manner, the trend of the costal margins; eyes decidedly (male) or moderately (female) prominent, ovate in outline, in length slightly longer than (male) or distinctly shorter than (female) the infra-ocular portion of the genae; antennae slightly exceeding the length of the head and pronotum in the male, somewhat depressed proximad. Pronotum with the disk flattened, rising mesad to the crest, the greatest width of the dorsum contained about one and one-half times in the length; cephalic margin obtuse-angulate in the male, with an almost imperceptible angle in the female, caudal margin produced acute-angulate in both sexes, the apical spines very sharp; median carina elevated into a serrate crest, which gradually increases in elevation to the middle of the metazona, thence sharply descends, the crest being severed by the three transverse sulci, the incisions being marked in both sexes, but extending half-way to the level of the disk with the intermediate portions acute dentiform in the male, the metazonal portion armed on the descending slope with long dentiform spines similar to those seen in species of *Colpolopha*; lateral angles projecting laterad and regularly armed with numerous blunt denticles in the female and with a series of very prominent elongate spini-

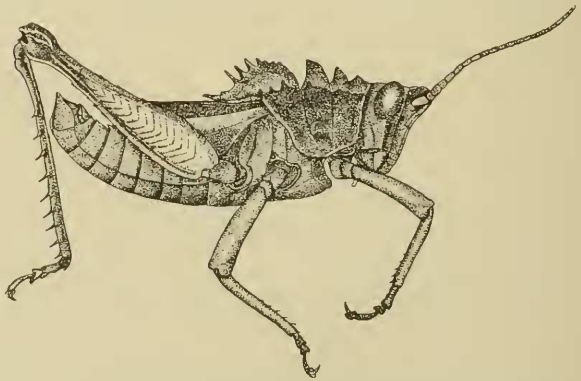


FIG. 9. HELIONOTUS MIRABILIS. LATERAL VIEW OF MALE TYPE. (X 2)

form processes in the male; the dorsum of the pronotum is distinctly diamond-shaped, regularly narrowing cephalad and caudad, but more sharply so caudad; surface of the dorsum with a number of rather regularly placed raised points; lateral lobes with their dorsal length distinctly greater than their depth. Tegmina about two-thirds the length of the dorsum of the pronotum, coriaceous, the principal veins alone marked; costal lobe greatly developed, the costal field at the middle of the tegmen being wider than the remainder of the same, costal margin concavely emarginate from the greatly developed but rounded lobe to the apex; costal angle of the apex acute; sutural margin slightly arcuate; apex narrow, obliquely and very decidedly sinuato-truncate. Wings reaching very nearly to the apex of the tegmina. Prosternal spine conic, erect, acute, interspace between the mesosternal lobes subquadrate in the male, slightly transverse in the female; interspace between the metasternal lobes transverse and slightly broader than the mesosternal interspace in both sexes. Abdomen slightly compressed in both sexes, the dorsum distinctly keeled and provided with spini-form points which are distinct in the male, almost obsolete on the exposed segments in the fe-



FIG. 10. *HELIONOTUS MIRABILIS*. LATERAL VIEW OF FEMALE TYPE. ($\times 1\frac{1}{2}$)

male; supra-anal plate of the male trigonal, cerci simple, acute styli-form, subgenital plate acute rostrate, distinctly carinate ventrad; ovipositor jaws of the female very blunt, margins hardly toothed. Cephalic and median femora somewhat inflated in the male, slenderer in the female. Caudal femora about as long as from the apex of the fastigium to the apex of the tegmina, robust proximad, slender distad, pagina with the pattern somewhat irregular and subimbricate, medio-dorsal carina acute serrato-dentate, the serrations numerous and of two grades, ventral carinae similar but with the serrations less numerous, of equal size in the male, smaller in the female, lateral carinae with blunter and shorter denticles, genicular lobes acute; caudal tibiae slightly shorter than the femora, sinuate, spines of the internal margin slightly longer than those of the external.

General colors of the male broccoli and hair brown; face cinnamon, the antennae isabelline, tips of the processes of the crest and lateral angles of the pronotum cinnamon, which color is also present as a

blotch along the ventral margin of the lateral lobes and obliquely across the middle of the same; eyes burnt umber; tegmina with a blackish brown spot, subovate in the male, subcircular in the female, on the ventral surface of the costal field, showing through on the dorsum, median section of the male tegmen with a longitudinal bar of cinnamon; limbs dull ochraceous with a trace of olivaceous, spotted with blackish; caudal tibiae dirty olive-green, the spines narrowly tipped with black.

General color of the female walnut brown, the abdomen burnt umber clouded with seal brown, the caudal limbs with russet the general color, while the tegmina are distinctly liver brown; points of the pronotal spines yellowish, the tegmina with the costal spot as apparent as in the male.

Measurements.

	Male.	Female.
	<i>mm.</i>	<i>mm.</i>
Length of body.....	25.5	39
Length of pronotum.....	10.8	15
Greatest width of dorsum of pronotum....	6.5	10.5
Length of tegmen.....	6.8	11
Length of caudal femur.....	16.3	23.5

A paratyptic pair have been examined in addition to the types, the data on both being to the effect that they were collected "on cotton." They agree fully with the types in structure, differing only in the general shade of color.

Genus *ELÆOCHLORA* Stål.

ELÆOCHLORA TRILINEATA (Serville).

1831. *Xiphicera trilineata* SERVILLE, Ann. Sci. Nat., XXII, p. 272. [Brazil.]

Rio de Janeiro, Brazil. December. (H. H. Smith.) One male.

The general color of this specimen is very deep green, the median stripe on the head and pronotum also being more ochraceous than the buffy margins of the tegmina.

ELÆOCHLORA HUMILIS, new species.

Type.—Male. Chapada, Matto Grosso, Brazil. (H. H. Smith.) Cat. No. 12085, U.S.N.M.

Allied to *Elæochlora viridicata* (Serville), but differing in the weaker and lower median carina of the pronotum, the more prominent eyes and the narrower tegmina.

Size rather large; form moderately slender; surface of the body as usual in this genus. Head with its exposed dorsal length less than half the length of the dorsum of the pronotum; occiput very slightly arcuate; fastigium subhorizontal, a shallow medio-longitudinal depression present cephalad, form of fastigium acute-angulate,

the apex very narrowly rounded, margins very slightly elevated; faciofastigial angle narrowly rounded when seen from the side, face moderately retreating; frontal costa very gradually widening ventrad from its junction with the fastigium to immediately ventrad of

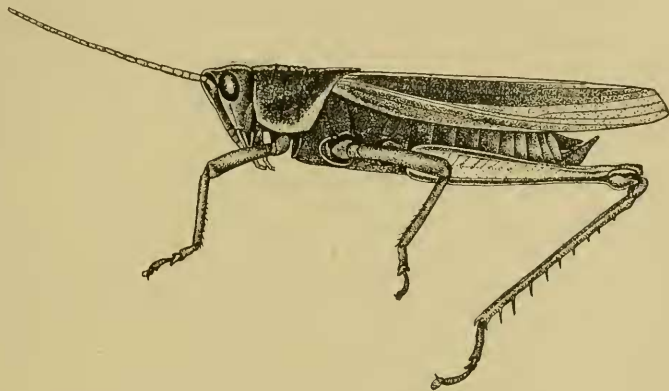


FIG. 11.—*ELEOCHLORA HUMILIS*. LATERAL VIEW OF TYPE. ($\times 1\frac{1}{2}$)

the insertion of the antennæ, subequal thence to the clypeal suture except for a slight constriction ventrad of the ocellus, sulcate throughout its length; supplementary facial carinæ prominent, slightly divergent caudad; eyes quite prominent when seen from the dorsum, ovate in outline, in length very slightly exceeding the infra-ocular portion of the genæ; antennæ slightly longer than the caudal femora, acute, slightly depressed proximad. Pronotum with the disk flattened caudad, slightly tectate cephalad; cephalic margin very slightly angulate, caudal margin slightly acute-angulate, the apex sharp; median carina low, not elevated; lateral angles subparallel in the metazona, the diverted ridge on the lobes of the prozona with fair sized tubercles, greatest dorsal width of the disk slightly more than half the length of the same; transverse sulci three in number, metazona very slightly longer than the prozona; lateral lobes with the ventral margin arcuate, ventro-cephalic angle rounded obtuse, ventro-caudal angle obtuse. Tegmina about two and one-half times the dorsal length of the pronotum, sublanceolate, the greatest width of the tegmen contained about five and one-half times in the length of the same; costal margin nearly straight mesad, slightly arcuate proximad and distad, sutural margin nearly straight, apex obliquely



FIG. 12.—*ELEOCHLORA HUMILIS*. DORSAL OUTLINE OF HEAD AND PRONOTUM OF TYPE. ($\times 1\frac{1}{2}$)

rotundato-truncate. Wings reaching to the apex of the tegmina. Prosternal spine conic, rather blunt, very slightly retrorse; interspace between the mesosternal lobes subquadrate, the angle of the lobes very broadly rounded; interspace between the metasternal

lobes distinctly transverse. Abdomen slightly compressed, supra-anal plate acute trigonal, the apex quite sharp and appreciably decurved, medio-longitudinal sulcus distinct; cerci very small, simple, styliform; subgenital plate compressed, the apex produced, acute rostrate, the ventral line of the produced portion carinate. Cephalic and median limbs of moderate size, the femora slightly inflated. Caudal femora about twice the length of the dorsum of the pronotum, moderately slender, regularly tapering, pattern of the pagina regular; caudal tibiæ about equal to the femora in length, almost imperceptibly sinuate, spines on external margin ten in number including the apical one, spines on the internal margin numbering the same.

Color pattern similar to that of males of all the species of the genus. Color on the sides of the dorsum of the pronotum, margining the median stripe on the head and covering the median section of the tegmina blackish, the median stripe on the head, pronotum, and anal area of tegmina tawny ochraceous. Costal area of the tegmina and that of the principal veins of the same pale oil green. Lateral lobes of the pronotum and sides of the head olive-green, the edging of the pronotal lobes, the line below the eye, and the proximo-costal streak on the tegmina buff. Eyes burnt umber; antennæ walnut brown. Pleura very dark olive-green; abdomen and venter raw umber. Limbs pale oil green; the caudal femora slightly brownish; the caudal tibiæ a brighter green, with the spines entirely black.

Measurements.

	<i>mm.</i>
Length of body	34
Length of pronotum.....	10
Length of tegmen.....	27.5
Length of caudal femur.....	19.8

The type alone has been seen.

ELÆOCHLORA PULCHELLA, new species.

Type.—Male. Corumbá, Matto Grosso, Brazil. (H. H. Smith.)
Cat. No. 12086, U.S.N.M.

Allied to *Elæochlora viridicata* (Serville) and *E. humilis* Rehn, but differing from both in the tegmina and wings not reaching the apex of the abdomen and in the fastigium being somewhat depressed caudad and projecting so that the angle of the face is not straight, but slightly concave. In the weak median carina of the pronotum it agrees with *E. humilis*, but the coloration is more like *E. viridicata*.

Size medium; general form and surface similar to other species of the genus. Head with its exposed dorsal length slightly less than half that of the pronotum; occiput very considerably arcuate; the interocular area considerably depressed; fastigium moderately acute trigonal, the apex when seen from the dorsum very

narrowly rounded, the surface distinctly depressed within the margins; when seen from the side, the line of the fastigium rises very considerably from the interocular depression, rounding over the summit of the fastigium into the facial line; angle of the face con-

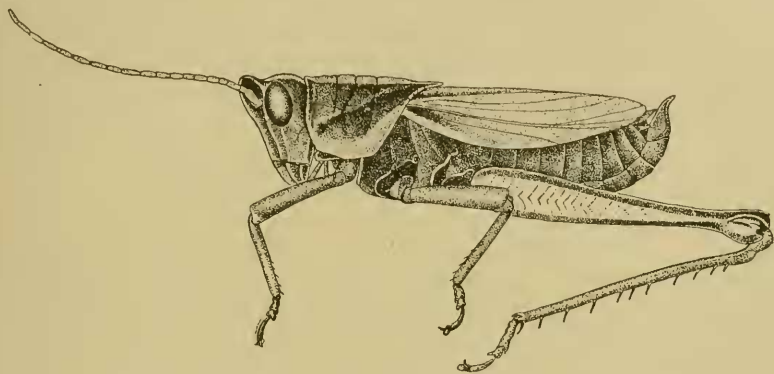


FIG. 13.—*ELEOCHLORA PULCHELLA*. LATERAL VIEW TYPE. ($\times 2$)

siderably retreating, slightly concave; frontal costa very slightly expanding caudad, reaching to the clypeal suture, sulcate throughout its length; eyes moderately prominent, ovate in outline, in length very slightly exceeding the infra-ocular portion of the genæ; antennæ over twice the length of the pronotum, rather slender, very slightly depressed proximad. Pronotum with its greatest dorsal width contained one and five-eighths times in the length, slightly tectate on the prozona, distinctly flattened on the metazona; cephalic margin subtruncate, caudal margin rectangulate; median carina moderately elevated, with an extremely slight longitudinal arcuation; lateral angles rectangulate on the metazona, descending ventro-cephalad and armed with distinct tubercles on the prozona; transverse sulci three in number, deeply impressed, prozona and metazona subequal in length; lateral lobes very considerably longer than deep, the ventral margin obtuse-angulate, the caudal margin oblique, the ventro-caudal angle obtuse; all the pronotal margins except the ventral ones supplied with small, rounded, more or less distinct and regularly placed nodes. Tegmina very slightly longer than the head and pronotum together, reaching to the base of the supra-anal plate, acute-lanceolate in shape; costal margin arcuate, sutural margin straight.

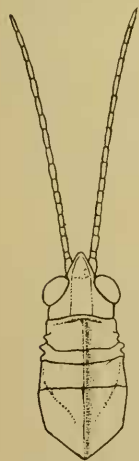


FIG. 14.—*ELEOCHLORA PULCHELLA*. DORSAL VIEW OF HEAD AND PRONOTUM OF TYPE. ($\times 2$)

Wings reaching to the tips of the tegmina. Prosternal spine erect, conic, slightly blunted; interspace between the mesosternal lobes very slightly longitudinal; interspace between the metasternal lobes slightly transverse, the cephalic margin of the same obtuse-angulate.

Abdomen slightly compressed; supra-anal plate acute trigonal, the apex blunt, the plate tectate in transverse section, the median section slightly elevated, gradually narrowing caudad; cerci very small, simple, styliform; subgenital plate compressed, produced rostrate, the apex slightly depressed, medio-ventral line carinate and slightly lamellate before the apex. Cephalic and median femora moderately inflated. Caudal femora slightly shorter than the head and tegmina together, moderately slender, tapering, the pagina with a rather regular pattern, genicular lobes with the apex narrowed and rounded; caudal tibiae about equal to the femora in length, armed in the external margin with 11 spines including the apical one, internal margin with 9 spines.

General color pattern that found in most species of the genus. Medio-longitudinal stripe orange-rufous on the head, orange-ochraceous on the pronotum, becoming paler caudad and cream buff on the anal area of the tegmina; remainder of disk of pronotum, sides of the dorsum of the head and along the anal vein of the tegmina blackish, the blackish extending over the lateral lobes of the pronotum and there washed with olive-green. Face gallstone yellow; genae washed with olive-green; eyes burnt umber; antennae olive, greenish proximo-ventrad; fastigium margined laterad with blackish. Pronotum with the deflected lateral angles greenish yellow, the usual pale blotch on the margins of the lateral lobes cream-buff. Tegmina pale oil green, margined on the costal edge with a bar of dull whitish, relieved proximad by an adjacent internal splotch of blackish. Abdomen tawny-olive. Femora vinaceous-cinnamon, oil green distad, genicular arches of caudal femora mars brown; caudal tibiae and tarsi oil green, the former with the spines on the internal margin blackish, on the external margin pale with blackish tips.

Measurements.

	<i>mm.</i>
Length of body	28
Length of pronotum.....	9
Length of tegmen	16
Length of caudal femur.....	19

The type is unique.

Genus *CALLONOTACRIS*, "new.

A member of the *Tænipodæ* and allied to *Tæniopoda*, from which it differs in the compressed form, in the strongly elevated and arcuate pronotal crest, and the slightly fossulate fastigium.

Form compressed; head very much deeper than broad; fastigium strongly declivent and very slightly fossulate; frontal costa continuous with the compressed frontal costa. Pronotum cristate, strongly

arched cephalo-caudad, cephalic angle of the disk considerably produced, caudal angle very greatly produced. Tegmina ample in the male, rather short in the female; costal lobe well developed. Wings well developed; axillary area slightly inflated in the male. Caudal tibiae with the spines of the two margins subequal in length; apical spine present on the external margin.

The superficial resemblance of this genus to the *Œdipodine* genera *Tropidolophus* and *Pyrgodera* is considerable.

Type.—*Callonotacris lophophora*, new species.

CALLONOTACRIS LOPHOPHORA,^a new species.

Types.—Male and female. Chapada, Matto Grosso, Brazil. January (female), April (male). (H. H. Smith.) Cat. No. 12087, U.S.N.M.

Size moderately large; surface of the head smooth, of the pronotum and pleura rugulose-punctate. Head with the exposed dorsal length

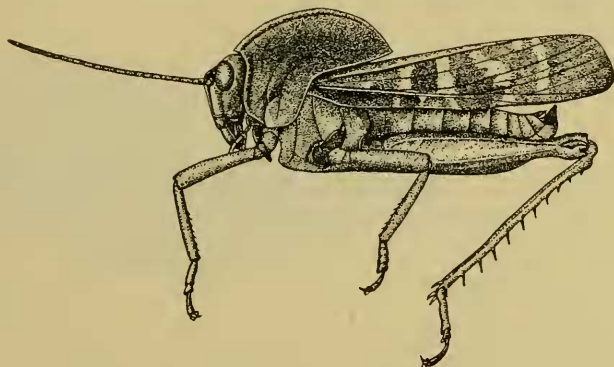


FIG. 15.—CALLONOTACRIS LOPHOPHORA. LATERAL VIEW OF MALE TYPE. ($\times 1\frac{1}{2}$)

equal to half (female) or two-thirds (male) the width across the eyes; occiput very slightly rounded, dipping sharply into the fossulate disk of the fastigium in the male, less sharply so in the female; disk of the fastigium moderate fossulate in the male, slightly so in the female, a very slightly raised margin surrounding the lateral and caudal borders of this area, in addition to which there is also a trace of a medio-longitudinal line of a similar structure, this latter being distinctly marked in the male and hardly appreciable in the female; cephalic portion of the fastigium with a slight medio-longitudinal sulcus, cephalic margins of the fastigium sharply compressed and passing ventrad as the lateral margins of the frontal costa; lateral foveolæ prominent, set in a subtrigonal area; fastigio-facial angle

^a*Λοφος*, signifying *crest*; *φορα*, signifying *carrying*.

rounded obtuse-angulate, face hardly retreating, subvertical; frontal costa very narrow, subequal (female) or very slightly expanding (male) dorsad of the ocellus, slightly constricted ventrad of the ocellus, the margins diverging thence and becoming fainter until hardly appreciable at the clypeal suture, sulcate except in the ventral fourth; eyes moderately (male) or hardly (female) prominent, elongate subreniform-ovate in outline, slightly longer than (male) or equal (female) to the infra-ocular portion of the genæ; antennæ about equal to the caudal femora in length, simple, coarse, submoniliform distad. Pronotum with its dorsal length about four-fifths that of the caudal femora, the median carina elevated, cristate, arcuate, produced cephalad and caudad, the height of the crest from the dorsum being slightly more (male) or slightly less (female) than a fourth the length of the same, the margin of the crest entire; cephalic

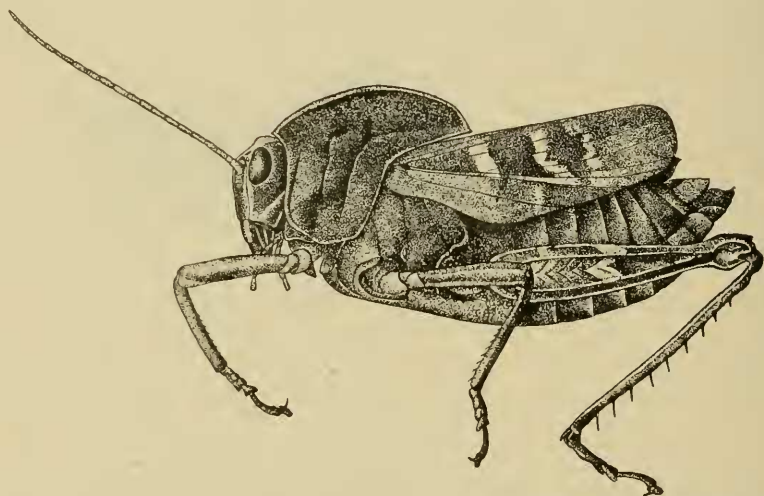


FIG. 16.—*CALLONOTACRIS LOPHOPHORA*. LATERAL VIEW OF FEMALE TYPE. ($\times 1\frac{1}{2}$)

margin produced rectangulate, caudal margin produced into a lanceolate process in length but little less than equal to the remainder of the pronotum; disk not at all flattened, sloping ventrad into the vertical lateral lobes, lateral angles but slightly developed on the metazona and these rounded; transverse sulci three in number, the principal one the deepest, none intersecting or even ascending the sides of the crest; lateral lobes with the dorsal length slightly greater than the depth, cephalic margin arcuate emarginate around the side of the head, ventral margin obtuse-angulate, caudal margin oblique, the ventro-caudal angle rounded obtuse-angulate. Tegmina about twice the length of the pronotum in the male, one and one-third times the length of the same in the female, broad in both sexes, the greatest width contained four and one-half (male) or two and one-third

(female) times in the length of the tegmen; costal lobe well developed, very large and more apparent in the female than in the male; sutural margin nearly straight, apex rotundato-truncate. Wings reaching to the tips of the tegmina, quite broad in the male, the axillary field with the margin arcuato-lobate, apex of the wing rotundato-truncate. Prosternal spine compressed, slightly retrorse, the apex caudad; interspace between the mesosternal lobes subquadrate in both sexes; interspace between the metasternal lobes transverse. Abdomen moderately compressed; supra-anal plate of the male acute-trigonal, tectate, the median sulcus narrow and not well marked; cerci of the male small, simple, styliform; subgenital plate compressed, slightly rostrate, the apex very acute when seen from the dorsum, moderately acute when seen from the side, ventral face of apex with a slight ridge; dorsal ovipositor jaws of the female with the edges unarmed. Cephalic and median limbs rather slender, moderately elongate. Caudal femora reaching to (female) or considerably exceeding (male) the apex of the abdomen, moderately compressed, moderately robust but tapering in the distal four-fifths and with a very slight dorsal concavity in the female, margins well elevated, pattern irregular; caudal tibiae equal to the femora in length, rather robust, very slightly sinuate, spines robust, ten (female) to eleven (male) in number on the external margin, eight in number on the internal.



FIG. 17.—CALLO-NOTACRIS LOPHOPHORA. DORSAL OUTLINE OF HEAD AND PRONOTUM OF MALE TYPE. ($\times 1\frac{1}{2}$)

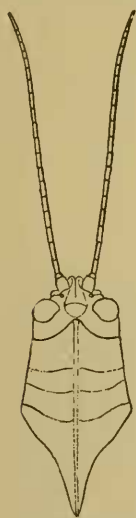


FIG. 18.—CALLO-NOTACRIS LOPHOPHORA. DORSAL OUTLINE OF HEAD AND PRONOTUM OF FEMALE TYPE. ($\times 1\frac{1}{2}$)

General color pitchy brown, lined along the crest with orange-ochraceous and marked on the interocular region and fastigium with the same color, bars of which cover the region along the supplementary facial carinae, reaching to the base of the labrum. Tegmina with obliquely transverse series of blotches of cream-buff, breaking up toward the margins and toward the apex. Caudal femora with three incomplete annuli of the same color; caudal tibiae orange-ochraceous, blackish distad and proximad, spines blackish at the bases and at the tips. Cephalic and median limbs blackish, with some obscure markings of dull cream-buff. Wings geranium red, margined with blackish, that of the anterior field broader than that of the remainder, disk with numbers of quadrate and oblong blotches of brownish black. Abdomen with the sides of the dorsal segments spotted along the edge with ochraceous-rufous, a large blotch of the same color at the dorsal extremity of each ventral abdominal segment. Antennae tipped with buffy; eyes chestnut.

Measurements.

	Male.	Female.
	<i>mm.</i>	<i>mm.</i>
Length of body.....	32	44
Length of pronotum.....	13.5	18.2
Greatest dorsal width of pronotum.....	5.6	7.8
Length of tegmen.....	28.3	25.5
Length of caudal femur.....	18	23.5

A paratypic pair have been examined in addition to the types. The only difference noticed is that the light markings on the tegmina and abdomen are more numerous and much more buffy in color.

Genus ZONIOPODA Stål.

ZONIOPODA MIMICULA, new species.

Type.—Male. Chapada, Matto Grosso, Brazil. November. (H. H. Smith.) Cat. No. 12088. U.S.N.M.

Closely allied to *Zoniopoda iheringi*; Pictet and Saussure, but differing in the smaller size, the narrower, subequal and less deflected

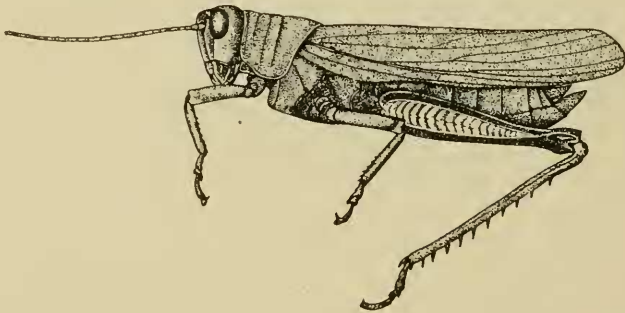


FIG. 19.—ZONIOPODA MIMICULA. LATERAL VIEW OF TYPE. (X 2)

fastigium, the less angulate caudal margin of the pronotum and weaker median carina of the same. The subgenital plate is also somewhat more produced and the coloration more uniformly green.

Size rather small (for the genus); surface of head and thorax (except venter) punctate. Head with its dorsal length contained one and two-thirds times in that of the pronotum; occiput moderately elevated, arcuate, interocular region and fastigium slightly declivent, the former about two-thirds the greatest width of the fastigium; fastigium rectangulate with the apex truncate, lateral margins very slightly elevated, the surface of the disk ruguloso-punctate; fastigio-facial angle obtuse-angulate, facial line appreciably but not greatly retreating, slightly arcuate; frontal costa rather broad, subequal in width, very slightly narrowed at its junction with the fastigium, separated from the disk of the latter by a slightly elevated carina,

the margins of the costa hardly reaching the clypeal suture, punctate, with a trace of a median carina dorsad, distinctly sulcate for a short distance ventrad of the ocellus; supplementary facial carinae moderately divergent, convex arcuate; eyes moderately prominent, ovate in outline, in length exceeding the infraocular portion of the genae; antennae about twice as long as the pronotum. Pronotum with its greatest dorsal width contained about one and one-half times in the length; cephalic margin very slightly produced, arcuate, caudal margin obtuse-angulate; dorsum very slightly tectate, median carina hardly apparent on the prozona, distinct but very low on the metazona, lateral angles very well rounded, more apparent on the metazona than on the prozona; transverse sulci four in number, the cephalic not severing the carina, prozona and metazona subequal, dorsum of the metazona very slightly inflated; lateral lobes with the dorsal length slightly more than the depth, ventral margin rounded obtuse-angulate, ventro-caudal angle rather broadly rounded. Tegmina exceeding the tips of the caudal femora by nearly the dorsal length of the head, of medium width, costal margin with a slight indication of the costal lobe, sutural margin nearly straight, apical margin obliquely rotundato-truncate; principal veins rather heavy. Wings equaling the tegmina. Prosternal spine conic, erect, blunt; interspace between the mesosternal lobes reversed wedge-shaped, narrow cephalad, the caudal width about equal to the depth; interspace between the metasternal lobes small, subquadrate. Supra-anal plate lanceolate, the apex blunt, strongly tectate, the median sulcus broad proximad, narrower distad; cerci simple, styliform; subgenital plate very strongly produced, compressed, the apex with a narrow and deep V-shaped emargination, the line of the plate nearly straight and hardly elevated distad when seen from the side. Caudal femora reaching about to the apex of the abdomen, rather slender, pagina with a regular, close and obtuse-angulate pattern, genicular lobes slightly acute-angulate; caudal tibiae very slightly shorter than the femora, very slightly sinuate, armed on the external margin with ten to eleven spines, including the apical one, internal margin with eleven.

General color uniform pale apple green; eyes buff; antennae clove brown, the proximal segments annulate distad with yellowish; caudal tibiae and tarsi scarlet, the former greenish proximad, spines greenish, tipped with black.



FIG. 20.—ZONIO-
PODA MIMIC-
ULA. DORSAL
OUTLINE OF
HEAD AND PR-
NOTUM. (X 2)

Measurements.

	mm.
Length of body.....	26.8
Length of pronotum.....	5.5
Length of tegmen.....	21.5
Length of caudal femur.....	14

A paratypic male (October; in campo) has also been examined. It does not differ appreciably from the type.

ZONIOPODA TARSATA (Serville).

1831. *Acridium tarsatum* SERVILLE, Ann. Sci. Nat., XXII, p. 283. [Brazil.]

Rio de Janeiro, Brazil. December. (H. H. Smith.) One male, one female.

These specimens are perfectly typical of the species, the cephalic and median femora being blackish with a broad median and a very narrow proximal incomplete annulus of red, the tibiæ blackish with a median annulus of orange.

Genus TROPIDACRIS Scudder.

1869. *Tropidacris* SCUDDER, Proc. Boston Soc. Nat. Hist., XII, p. 346.

Type, as here designated *T. dux* (Drury) [*Gryllus* (*Locusta*) *dux* Drury].

TROPIDACRIS GRANDIS (Thunberg).

1824. *Gr[yllus] grandis* THUNBERG, Mém. Acad. Imp. Sci. St. Pétersbourg, IX, p. 403. [Locality not stated.]

Rio de Janeiro, Brazil. (H. H. Smith.) One male, one female. The uniform green tegmina are quite characteristic of this species.

TROPIDACRIS CRISTATA (Linnæus).

1758. [*Gryllus* (*Locusta*)] *cristatus* LINNÆUS, Syst. Nat., 10th ed., p. 431. [America; Arabia; Asia.]

Pará, Brazil. June. (H. H. Smith.) One male, three females.

Marajo, State of Pará, Brazil. February, 1901. (J. B. Steere.) One female.

Bonito, State of Pernambuco, Brazil. January 4 and February, 1883. (A. Koebele.) Two males, two females.

One Para male has the tegmina distinctly pinkish. Information with one of the Bonito individuals is to the effect that it was taken "on cotton."

Genus LEPTYSMSA Stål.

LEPTYSMSA OBSCURA (Thunberg).

Chapada, Matto Grosso, Brazil. August, September. (H. H. Smith.) Two males, three females.

Bonito, Pernambuco, Brazil. February 18, 1883. (A. Koebele.) One damaged individual, probably a male.

These specimens have the fastigium, as a rule, slightly smaller than Paraguayan specimens, while the variation in the form of the same is quite considerable.

Genus LEPTYSMINA Giglio-Tos.

1894. *Leptysmina* GIGLIO-TOS, Boll. Mus. Zool. Anat. Comp. Torino, IX, No. 184, p. 34.

Included *Leptysmina pallida* and *rosea* Giglio-Tos, of which the latter is here selected as the type.

LEPTYSMINA ROSEA (Giglio-Tos).

1894. *L[eptysmina] rosea* GIGLIO-TOS, Boll. Mus. Zool. Anat. Comp. Torino, IX, No. 184, p. 34. [Buenos Ayres.]

Corumbá, Matto Grosso, Brazil. March; lowland. (H. H. Smith.)
Five males.

These specimens are perfectly typical of this species, which is now known to range from Buenos Ayres to Corumbá.

In size the individuals in hand are very uniform. Specimens from Carcaraña, Argentina, determined as this species by Bruner, are seen on comparison with the descriptions and Corumbá material to be the allied *Leptysmina pallida* Giglio-Tos. The handiest index to the two species, aside from the greater size of *pallida*, is the character of the prosternal spine.

Genus STENACRIS Walker.

The species of *Stenacris* available for study may be separated by the following key:

- a. Subgenital plate of the male with either an erect dorsal median lobe or with the margin supplied with lateral acute processes or both.
- b. Subgenital plate of the male with a median dorsal lobation.
 - c. Fastigium moderately acute-angulate; eyes separated by an interspace about equal to one-third the greatest width of the fastigium; form as usual in the genus.....*S. cylindroides*.
 - c'. Fastigium very strongly acute-angulate; eyes separated by an interspace about equal to one-fourth the greatest width of the fastigium; form very slender.....*S. mexicana*.
- b'. Subgenital plate of the male with a pair of lateral horn-like processes, but no median erect lobule.....*S. vitreipennis*.^a
- a'. Subgenital plate of the male produced and compressed, without accessory lobes or styles.
 - b. Size small (male 23-25 mm.); fastigium distinctly slender, slightly longer than broad.....*S. gracilis*.
 - b'. Size large (males 32-33, females 40-42 mm.); fastigium broad, at least as broad as long, in the female much broader than long.....*S. coccineipes*.

^a This name will have to be used in place of *Stenacris chlorizans* Walker (*Arnilia chlorizans* of authors). Marshall's *Gryllus vitreipennis* (Zoologische Abhandlungen aus den Annalen des Wiener Museums der Naturgeschichte, 1841, p. 214, pl. xviii, fig. 6) described from Georgia is clearly the same insect as that to which Walker's name is now applied, agreeing in structure, color pattern, and size. In consequence the species must be known as *Stenacris vitreipennis* (Marshall).

STENACRIS CYLINDRODES (Stål).

1860. *Opsomala cylindroides* STÅL, Kong. Svenska Freg. Eugenies Resa, Ins., p. 325 [Rio Janeiro, Brazil].

Corumbá, Matto Grosso, Brazil. March; lowland. (H. H. Smith.) Three males, two females.

Bonito, State of Pernambuco, Brazil. January, 1883. (A. Koebele.) One male.

The Corumbá specimens are quite uniform in size and color, the pale lateral bar being visible in all, but quite weak in one female. The Bonito individual is distinctly smaller with the vertex blunter than is the case in the other representatives, but the genitalia are of exactly the same character.

This species is now known to range from the State of Pernambuco to that of Matto Grosso and the Chaco of Argentina (Resistencia).

STENACRIS GRACILIS (Giglio-Tos).

1897. *A[rnilia] gracilis* GIGLIO-TOS, Boll. Mus. Zool. Anat. Comp. Torino, XII, No. 302, p. 30. [San Lorenzo, Jujuy, Argentina.]

Corumbá, Matto Grosso, Brazil. March; lowland. (H. H. Smith.) Three males.

These specimens are of much the same size, and have a dark dorsal edging to the lateral pale bar.

It is of interest to note that the genus *Leptysmia* presents much the same types of male subgenital plate noticed in this genus, while at least one species of that genus has the pale lateral bar supplied with a darker edging as in this species.

The form is now known from the type locality, San Bernardino, Paraguay (Bruner) and Corumbá, Brazil.

STENACRIS COCCINEIPES (Bruner).

Corumbá, Matto Grosso, Brazil. March; highland. (H. H. Smith.) One male, one female.

Genus OXYBLEPTELLA Giglio-Tos.

OXYBLEPTELLA PULCHELLA, new species.

Types.—Male and female; Chapada, Matto Grosso, Brazil. June. (H. H. Smith.) No. 12089. U.S.N.M.

Allied to *Oxybleptella sagitta* Giglio-Tos from Paraguay and São Paulo, Brazil, but more robust and less compressed, with the fastigium rectangular (male) or obtuse angulate (female). The head is also somewhat inflated in the new form and the eyes are larger and more prominent.

Size small; form slender, subequal in width; surface glabrous, punctulate on the pronotum and pleura. Head with the exposed dorsal surface slightly longer than the dorsum of the pronotum; occiput with an extremely slight arcuation when seen from the side, very slightly elevated dorsad of the line of the pronotum, interocular region descending very slightly to the fastigium, the width of the interspace between the eyes about half that of the fastigium; fastigium slightly acute rectangulate (male) or slightly obtuse rectangulate (female), the apex broadly rounded, the breadth considerably greater than the length, disk of the fastigium slightly depresso-punctate within the margins, the interocular region (female) or interocular region and fastigium (male) with a slight but distinct medio-longitudinal sulcus; fastigio-facial angle acute-angulate, the immediate angle well rounded, facial line very strongly retreating, the angle of the face being even more decided ventrad of the insertion of the antennæ; frontal costa broad, considerably narrowed dorsad to meet the fastigium, subequal in width from between the antennæ to the clypeal

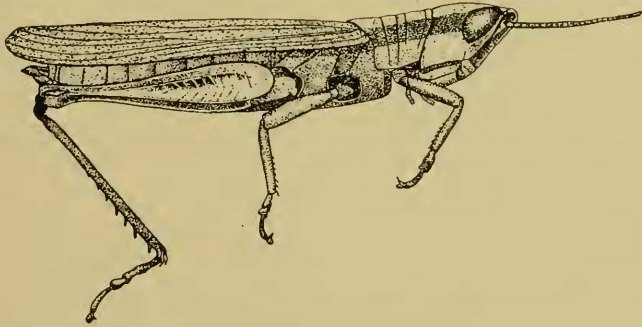


FIG. 21.—*OXYBLEPTELLA PULCHELLA*. LATERAL VIEW OF FEMALE TYPE. (X 3)

suture, margins well elevated, surface of costa and face between facial supplementary carinæ impresso-punctate; supplementary facial carinæ moderately divergent dorsad, decidedly divergent ventrad, more particularly in the female; eyes rather large, elongate acute-subpyriform, moderately prominent when seen from the dorsum, length nearly three times that of the infra-ocular portion of the genæ; antennæ distinctly shorter than the head and pronotum together, very appreciably depressed, very slightly ensiform, apex blunt. Pronotum with its greatest dorsal width contained one and two-thirds (female) to one and three-fourths (male) times in the greatest length, dorsum moderately arcuate in transverse section; cephalic margin arcuate (male) or arcuato-truncate (female), caudal margin with a hardly appreciable angle in the male, very slightly but distinctly obtuse-angulate in the female, lateral angles very much rounded on the prozona, apparent but rounded on the metazona; disk of the

pronotum subequal in width, median carina low, rather coarse, marked on all of the pronotum, transverse sulci three in number; metazona equal to (male) or exceeding (female) two-thirds the length of the prozona; lateral lobes distinctly longer than deep, the ventral margin with a very slight obtuse-angulation. Tegmina about one and two-thirds (male) to twice (female) the length of the head and pronotum together, narrow, subequal; costal margin with a hardly appreciable lobe and a moderate distal arcuation, sutural margin nearly straight, apex with a slight oblique truncation, the extreme apex narrowly rounded; distinct intercalary vein present. Wings extending to the tips of the tegmina.



FIG. 22.—
OXYBLEP-
TELLA
PULCH-
ELLA. DOR-
SAL OUT-
LINE OF
PRONO-
TUM OF
MALE.
(X 3)

Prosternal process transverse, the apical margin arcuate emarginate, the lateral angles bluntly protuberant, not retrorse; interspace between the mesosternal lobes strongly longitudinal, the length about four times the width, the interspace hardly more than a third the width of one of the lobes; metasternal lobes contiguous in both sexes. Abdomen hardly compressed; supra-anal plate of the male short, stout pyriform, the greatest width slightly more than the length, apex bluntly rounded; a pair of blunt tubercles placed a short distance proximad of the apex; cerci of the male simple, robust in the proximal third, then strongly bent dorsad and tapering to the apex which is curved inward toward the median line; subgenital plate of the male acute-angulate when seen from the dorsum, apex well rounded when seen from the side. Cephalic and median limbs very short, the femora slightly more robust in the male. Caudal femora reaching about to the apex of the abdomen in both sexes, somewhat compressed, moderately robust in the proximal half, tapering distad, the genicular extremity quite small; caudal tibiae appreciably shorter than the femora, armed on the external margin with seven spines, on the internal margin with ten, both margins with slight lamellate expansions distad, the tibiae appreciably broadened in the same portion.

General color gamboge yellow, broad postocular bars of vandyke brown, slightly darker in the male, extending caudad over the dorsum of the lateral lobes and the same portion of the pleura, represented on the costal half of the tegmina by the prout's brown infuscation of the region, a narrow cloud along the dorsum of the pagina of the caudal femora vandyke brown, slightly chocolate on its ventral edge; face walnut brown, the area thus colored limited by a pair of strongly divergent dark lines which extend ventrad from the insertion of the antennae; eyes



FIG. 23.—OXYBLEPTELLA PULCHELLA. DORSAL OUTLINE OF HEAD AND PRONOTUM OFFEMALE.
(X 3)

raw umber; antennæ pale russet; a very narrow median line on the fastigium, occiput and pronotum seal brown in the male, in the female olive green on the head, liver brown on the pronotum; spines on caudal tibiæ with the apical halves blackish.

Measurements.

	Male.	Female.
	<i>mm.</i>	<i>mm.</i>
Length of body	20	23.8
Length of pronotum	3	4
Length of tegmen.....	12.8	16.2
Length of caudal femur.....	9.5	12

One paratype male (June) and two paratype females (April and May) have been examined in addition to the types. They do not exhibit any noteworthy difference from the typical pair.

Genus INUSIA Giglio-Tos.

INUSIA BONITENSIS, new species.

Type.—Male; Bonito, Pernambuco, Brazil. January, 1883. (A. Koebele.) Cat. No. 12090. U.S.N.M.

Allied to *I. pallida* Bruner from Paraguay^a but differing in the more prominent eyes and the broader, darker lateral bars.

Size small; form elongate, slightly compressed; surface of head, pronotum, pleura and to an extent the dorsum of the abdomen punctulate, the pronotum, pleura and face with the impressions closely placed and sharply defined. Head with the exposed dorsal length contained one and one-half times in the length of the pronotum; occiput decidedly ascending to the sub-horizontal interocular region, which latter is hardly more than a third the greatest width of the fastigium, a slight median carina present on the interocular region and occiput; fastigium acute-lanceolate; fastigio-facial angle sub-rectangulate, the interocular rostrum with its outline curving gently from the dorsal angle to a short distance ventrad of the insertion of the antennæ, whence the facial line is regularly and very considerably retreating; frontal costa very narrow, subequal in width, very slightly expanding dorsad of the insertion of the antennæ, distinct and sulcate from the fastigio-facial angle to the clypial suture; supplementary facial carinæ distinct, sub-parallel, slightly convex sinuato-arcuate; eyes quite prominent, ovate in outline, the length slightly greater than that of the infra-ocular portion of the genæ; antennæ lacking. Pronotum with the greatest dorsal width contained about twice in the length of the same; cephalic and caudal margins arcuate obtuse-angulate; median

^a Proc. U. S. Nat. Mus., XXX, 1906, p. 660.

carina slight and low but quite apparent on the whole dorsum; lateral angles moderately rounded on the prozona, very slightly rounded on the metazona, the disk very gradually widening caudad; transverse sulci three in number, distinct, narrow, metazona about three-fifths of the entire length of the pronotum; lateral lobes very considerably longer than deep, the ventral margin strongly arcuato-

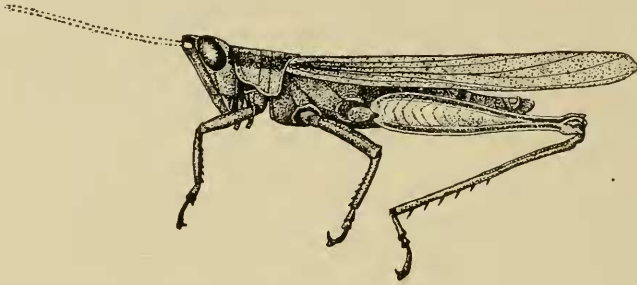


FIG. 24.—*INUSIA BONITENSIS*. LATERAL VIEW OF TYPE. (X 3)

emarginate cephalad, caudal section of the ventral margin straight, the ventro-caudal angle very broadly rounded. Tegmina very long and slender, exceeding the tips of the caudal femora by nearly the length of the pronotum, subequal; apex lanceolate. Wings equal to the tegmina. Prosternal spine conic, blunt, slightly retrorse; interspace between the mesosternal lobes slightly longitudinal, the interspace but little more than half the width of one of the lobes, the internal margin of the lobes convex arcuate; metasternal lobes contiguous. Abdomen slightly compressed; supra-anal plate lanceolate, the margin notched distad of the middle for the reception of the cerci, disk considerably depressed; cerci robust and tapering in the proximal half, thence sharply bent dorsad and narrowed to about a third the proximal width, tapering to the rather blunt apex, the axis of the cercus from the median bend being slightly toward the median line of the body, then curved slightly laterad at the tip; subgenital plate moderately compressed, the dorsal margins acute-angulate but not reaching to the inflated, sub-bulbous apex, the latter being moderately rounded when seen from the side. Cephalic and median limbs rather slender. Caudal femora surpassing the apex of the abdomen, the length being two and one-half times that of the pronotum, somewhat compressed, proximal portion regularly and evenly, but not greatly, inflated, tapering to the genicular region, genicular lobes moderately acute-angulate, pagina regularly and in the proximal section very closely patterned; caudal tibiae distinctly shorter than the femora, the distal portion considerably inflated, the margins



FIG. 25.—*INUSIA BONITENSIS*. DORSAL OUTLINE OF HEAD AND PRONOTUM OF TYPE. (X 3)

lamellate, external one armed with six spines, internal with ten; caudal tarsi with the proximal joint very considerably depressed and expanded.

General color wax yellow, quite greenish on the dorsum and tending toward gamboge yellow on the caudal limbs and abdomen; postocular bars vandyke brown, broad and reaching to the apex of the tegmina, covering all but the anal area of the same; eyes russet, clouded with vandyke brown dorso-caudad; caudal tibiae clouded with brownish, the spines yellowish very narrowly tipped with black.

Measurements.

	Mm.
Length of body	17.5
Length of pronotum	3.8
Length of tegmen	16.6
Length of caudal femur	10.6

The type alone has been examined.

Genus *STENOPOLA* Stål.

STENOPOLA PUNCTICEPS (Stål).

1860. *Opsomala puncticeps* STÅL, Kong. Svenska Freg. Eugenies Resa, Ius., p. 325.
[Rio Janeiro, Brazil.]

Corumbá, Matto Grosso, Brazil. March; highland. (H. H. Smith.)
One female.

This specimen is appreciably smaller than a specimen from Sapucay, Paraguay.

The range of this species now extends from San Lorenzo, Jujuy, Argentine, east to Rio Janeiro and from Sapucay, Paraguay, to Corumbá, Matto Grosso.

STENOPOLA BOHLSII Giglio-Tos.

Corumbá, Matto Grosso, Brazil. March and May; highland.
(H. H. Smith.) One male, four females.

The range of this species now extends from Resistencia Chaco, Argentina, to Corumbá.

Genus *PARACORNOPS* Giglio-Tos.

1894. *Paracornops* GIGLIO-TOS, Boll. Mus. Zool. Anat. Comp. Torino, IX,
No. 184, p. 31.

Type.—*Acrydium longipenne* De Geer.

PARACORNOPS AQUATICUM Bruner.

1906. *Paracornops aquaticum* BRUNER, Proc. U. S. Nat. Mus., XXX, p. 663.
[San Bernardino and Sapucay, Paraguay.]

Corumbá, Matto Grosso, Brazil. March; lowland. (H. H. Smith.)
Two males, two females.

Cuyabá, Matto Grosso, Brazil. February. (H. H. Smith.)
One male.

One of the female individuals is quite large, considerably exceeding the other female and the original measurements in size. There appears to be considerable variation in the depths of the coloring of the dark lateral bars, one specimen from Corumbá having them quite faintly indicated.

Genus MASTUSIA Stål.

1878. *Mastusia* STÅL, Bih. till Kong. Svenska Vet. Akad. Handl., V, No. 4, pp. 39 and 84.

Type.—*Mastusia quadricarinata* Stål.

MASTUSIA KOEBELEI, new species.

Types.—Male and female. Bonito, Pernambuco, Brazil. January 18, 1883 (male); February, 1883 (female). (A. Koebele.) Cat. No. 12091, U.S.N.M.

Differing from *Mastusia quadricarinata* from Peru in the much smaller size, shorter and narrower tegmina and different coloration.

Bolivar's *M. spectabilis*^a from the Upper Amazon region is not closely related to the new form.

Size small; face and surface of the thoracic segments punctate, the pronotum strongly so. Head with its exposed dorsal surface two-thirds (female) to four-fifths (male) the length of the pronotum; occiput slightly ascending very slightly arcuate; interocular space about one-half (male) to three-fifths (female) the greatest width of the fastigium; fastigium broad, very short, horizontal, the angle obtuse-angulate in both sexes, more decidedly so in the female than in the male; surface very slightly depressed within the margins; fastigio-facial angle acute-angulate, the immediate angle well rounded, facial line very decidedly retreating; frontal costa broad, subequal, but very slightly expanded between the antennæ, narrowed dorsad of the antennæ to joint the fastigium, a slight constriction present at the ocellus, margins distinctly elevated, surface moderately excavate and distinctly punctate; supplementary facial carinæ prominent, regularly and decidedly divergent caudad; eyes moderately prominent in both sexes, acute-ovate in outline, the length about half that of the infra-ocular portion of the genæ; antennæ slightly shorter than the head and pronotum together (male) or no longer than the pronotum (female), slightly depressed, very slightly narrowed toward the base. Pronotum with the greatest caudal width of the disk contained approximately one and one-half times in the length of the same; cephalic margin slightly arcuate (male) or arcuato-truncate (female), caudal margin distinctly emarginate mesad, the sides of the emargination convex, lateral angles very well rounded; median carina distinct, but very low, principal transverse sulcus the only one severing the carina, metazona about a

^a Anal. Soc. Esp. Hist. Nat., XIX, p. 325.

third the length of the prozona; lateral lobes slightly longer than deep, ventral margin slightly but distinctly arcuate-emarginate cephalad, the caudal section of the margin very bluntly obtuse-angulate, the ventro-caudal angle rounded. Tegmina extending slightly caudad of the margin of the metanotum, sub-lanceolate, the greatest width contained approximately three to four times in the length, apex moderately angulate. Wings very minute, lobiform, covered by the tegmina. Abdomen distinctly compressed, tectate dorsad; supra-anal plate short, transverse, the apical margin rectangular, disk considerably excavate; cerci moderately long, with a considerable arcuation dorsad before the middle, the apex blunt, with a sharply bent spine directed ventro-cephalad toward the median line; subgenital plate elevated and produced distad, strongly compressed and sub-lamellate in that portion, the apex when seen from the side well rounded. Prosternal process transverse, the apical margin rectangular, the angles slightly spiniform; interspace between the mesosternal lobes distinctly longitudinal, about twice as long as wide, with the interspace about two-thirds the width of one of the lobes (male) or wedge shaped with the narrowest (caudal) portion of the interspace slightly less than half the length of the same (female); metasternal lobes contiguous in both sexes. Cephalic and median limbs very short, rather slender in the female. Caudal femora reaching to (female) or exceeding (male) the apex of the abdomen, moderately robust, tapering, genicular lobes bluntly angulate, pagina regularly and rather closely patterned; caudal tibiae distinctly shorter than the femora, slightly dilated distad, the margins distinctly lamellate in that portion, lateral margin with seven to eight spines, internal margin with ten to eleven spines; caudal tarsi with the proximal joint moderately depressed and dilated.

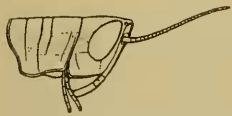


FIG. 27.—*MASTUSIA KOEBELEI*. LATERAL OUTLINE OF HEAD AND PRONOTUM OF FEMALE TYPE. ($\times 3$)

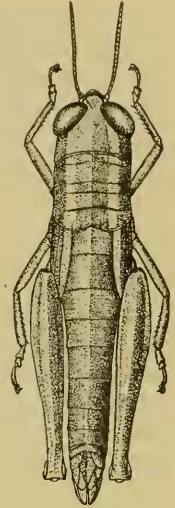


FIG. 26.—*MASTUSIA KOEBELEI*. DORSAL VIEW OF FEMALE TYPE. ($\times 3$)

General color russet, a broad postocular bar extending over the dorsal half of the lateral lobes, the ventral half of the tegmina and dorsal portion of the pleura vandyke brown, continued on the sides of the abdomen as a series of blotches of the same color in the female, as a bar in the male, becoming weaker distad in both sexes; ventral half of the lateral lobes, genæ and pleura wood brown; face with a pair of more (male) or less (female) divergent dark lines ventrad of the insertion of the antennæ; occiput with a dark brown median bar in the male; caudal tibiae vandyke brown distad, spines pale yellow, tipped with blackish.

Measurements.

	Male.	Female.
	<i>mm.</i>	<i>mm.</i>
Length of body.....	15.2	18
Length of pronotum.....	3	3.3
Length of tegmen.....	3.3	2.8
Length of caudal femur.....	9.2	10.2

One paratypic male (February) and four paratypic females (January and February) have also been examined. There is an appreciable amount of variation in color, some being more greenish than the types, while one has the color pattern very weak. Aside from this, however, they agree very well with the types.

Genus ALEUAS Stål.

ALEUAS VITICOLLIS Stål.

1878. *A[leuas] vitticollis* STÅL, Bih. till Kong. Svenska Vet. Akad. Handl., V, No. 4, p. 69. [São Leopoldo, Rio Grande do Sul, Brazil; Montevideo, Uruguay.]

Corumbá, Matto Grosso, Brazil. March. (H. H. Smith.) One male.

This specimen is slightly larger than the original measurements given by Stål, being 40 mm. instead of 35 mm. in the length of the body.

Genus PARALEUAS Giglio-Tos.

PARALEUAS FRATER, new species.

Types.—Male and female. Chapada, Matto Grosso, Brazil. June (male); November (female). (H. H. Smith.) Cat. No. 12093, U.S.N.M.

Closely allied to *Paraleuas minor* Bruner^a from Victoria, Brazil, but differing in the longer tegmina which average 15.2 mm. in the male and 14.5 in the female in the series in hand, instead of 11 and 12 mm. as in *P. minor*. The other proportions of the species are about the same.

Size very small; form moderately elongate and slender; surface of the pronotum and pleura strongly punctate, of the face moderately punctate. Head with its exposed dorsal length equal to three-fifths (female) or four-fifths (male) the dorsal length of the pronotum; occiput slightly ascendent, arcuate, interocular space narrow, hardly (male) or about (female) a third the greatest width of the fastigium, interocular region slightly descending; fastigium sub-horizontal, blunt rectangulate in both sexes, apex sub-truncate, margins distinct, disk very shallowly but distinctly excavate; fastigio-facial angle rounded rectangulate, more distinctly rounded in the female than the male, facial line very considerably retreating from between

^a Proc. U. S. Nat. Mus., XXX, 1906, 669.

the antennæ; frontal costa inflated dorsad, distinctly (male) or slightly (female) constricted ventrad of the ocellus, the ventral portion subequal, sulcate ventrad of the interantennal region, punctate dorsad, biseriate in the female, irregularly in the male; supplementary facial carinæ prominent, moderately divergent arcuato-convex; eyes quite (male) or moderately (female) prominent, sub-ovate in outline, the length about twice that of the infra-ocular portion of the genæ; antennæ about one and one-third times the length of the head and pronotum, slightly heavier in the male than in the female. Pronotum

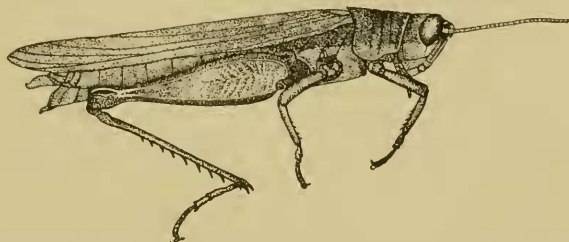


FIG. 28.—*PARALEUS FRATER*. LATERAL VIEW OF THE FEMALE TYPE. ($\times 3$)

very slightly sellate, with the greatest dorsal width of the disk contained about one and one-half times in the length of the same; cephalic margin arcuate, caudal margin rounded obtuse-angulate; median carina very low, hardly appreciable on the prozona in the male, apparent cephalad on that portion in the female, present though very weak on the metazona in both sexes, lateral angles very broadly

rounded, a slight shoulder on the metazona; transverse sulci three in number; metazona about two-thirds the length of the prozona; lateral lobes with the dorsal length greater than the depth, ventral margin obliquely arcuato-truncate caudad, considerably sinuato-emarginate cephalad, ventro-cephalic angle marked, slightly obtuse, ventro-caudal angle rounded broad obtuse. Tegmina slightly (female) or considerably (male) surpassing the apex of the abdomen, very (male) or moderately (female) narrow, subequal, apex lanceolate. Wings ample. Prosternal spine slightly compressed, very low and blunt; interspace between the mesosternal lobes longitudinal, moderately (female) or decidedly (male) constricted mesad, making the interspace hour-glass shaped; metasternal lobes contiguous. Abdomen somewhat (female) or



FIG. 29.—*PARALEUS FRATER*. DORSAL OUTLINE OF HEAD AND PRONOTUM OF FEMALE TYPE. ($\times 3$)

decidedly (male) compressed; supra-anal plate of the male moderately lanceolate; cerci of the male simple, styliform, reaching about to the apex of the subgenital plate; subgenital plate short, slightly compressed, blunt, the apical margin arcuate when seen from the side; ovipositor jaws of the female rather elongate, compressed. Cephalic and median limbs very short. Caudal femora falling

slightly (male) or considerably (female) short of the apex of the abdomen, robust, somewhat compressed, pagina regularly and closely patterned, genicular lobes slightly acute-angulate; caudal tibiæ slightly shorter than the femora, lateral margin with seven to eight spines, internal margin with nine to ten spines; caudal tarsi slender, elongate, second joint very slightly more than half the length of the proximal one.

General color of the dorsum russet in the male, mars brown in the female. The broad postocular bar extending caudad over the dorsal half of the lateral lobes and dorsum of the pleura bistre; face drab; genæ and ventral portions of the lateral lobes and of the pleura naples yellow. Tegmina of the dorsal color in the male, vandyke brown in the female, the surface entirely covered with a mottled lighter and darker pattern of small subquadrate blotches; wings very pale brownish hyaline, very faintly clouded at the apex. Abdomen with its dorsal and lateral aspects brownish black; entire venter tawny-olive, darker on the meso- and metasternum. Caudal femora yellow with the entire external face more or less distinctly clouded with very dull brownish purple; internal face with three spots of dark brown, one median, one pre-apical, one genicular; caudal tibiæ very dull glaucous becoming dark brownish distad, spines tipped with blackish brown. Eyes raw umber; antennæ dull rufous.

Measurements.

	Male.	Female.
	<i>mm.</i>	<i>mm.</i>
Length of body.....	15	19.5
Length of pronotum.....	2.6	3.3
Length of tegmen.....	14	15.5
Length of caudal femur.....	8.2	9.2

Three paratypic specimens have been examined in addition to the types, one being a male, the others females, the months represented being August and November. There is no variation of importance except some slight difference in color, the paratypic male being quite yellowish.

Genus JODACRIS Giglio-Tos.

JODACRIS FERRUGINEA (Giglio-Tos).

Chapada, Matto Grosso, Brazil. September, October, and November; one specimen labeled as taken in campo. (H. H. Smith.) One male, five females.

These specimens have been compared with Paraguayan representatives and prove to be inseparable. The male individual is more strikingly colored than any of the females, the yellowish ochre

on the caudal femora, dorsum of the pronotum, genæ, and ventral portions of the lateral lobes being quite striking, relieved as it is by the otherwise dull color of the insect. Two of the females are quite uniformly colored, the dark femoral bars being represented only by the faintest suggestion and the usual pale bars on the head and lateral lobes of the pronotum are not at all indicated. The general shade of one of the uniform specimens is very dull purplish red.

This species is now known to range from Chapada to Villa Rica, Paraguay.

JODACRIS FURCILLATA, new species.

Types.—Male and female. Chapada, Matto Grosso, Brazil. July (male) and August (female). (H. H. Smith.) Cat. No. 12093, U.S.N.M.

Allied to *J. ferruginea* but differing in the slightly smaller size, the proportionately slenderer form, and in the shorter and more distinctly incurved cerci of the male.

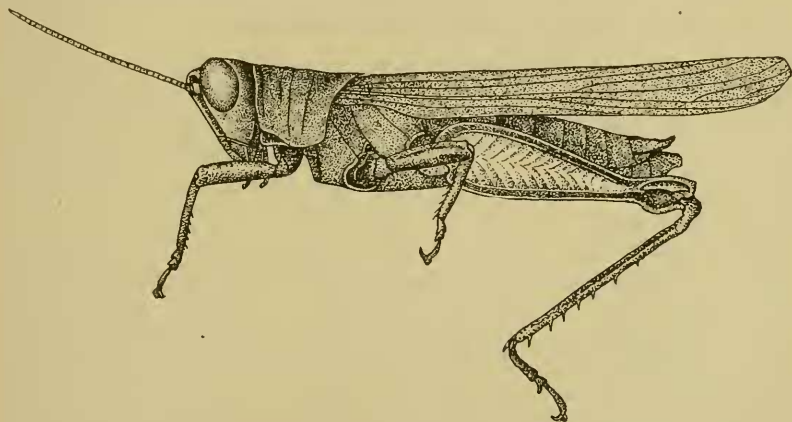


FIG. 30.—*JODACRIS FURCILLATA*. LATERAL VIEW OF MALE TYPE. (X 4½)

Size rather small; form moderately slender; surface punctate, the abdomen of the female much smoother than that of the male. Head with its dorsal length about equal to (female) or slightly exceeding (male) the length of the prozona; occiput very slightly rounded; interocular region narrow, slightly (female) or distinctly (male) more than half the greatest fastigial width; fastigium rounded obtuse angulate, the greatest width more than the length, the apex subtruncate, the surface when seen from the side somewhat declivent, slightly excavate mesad and in the intermarginal region; fastigiofacial angle obtuse, the line of the face considerably retreating ventrad, the interantennal portion very slightly inflated; frontal costa of moderate breadth dorsad, slightly expanded between the antennæ, not sulcate, strongly punctate, immediately ventrad of the ocellus the costa is strongly and sharply constricted, ventrad of

which portion it is of moderate width, subequal, becoming weaker toward the clypeal suture, the portion ventrad of the ocellus sulcate; lateral facial carinæ slightly arcuate and divergent dorsad, subparallel ventrad; eyes moderately prominent in both sexes, the length considerably (male) or slightly (female) greater than that of the infra-ocular portion of the genæ, subovate in outline; antennæ about equal to the head and pronotum in length, thick, slightly depressed proximad, apex blunt. Pronotum with the cephalic margin bearing a broad shallow median emargination, caudal margin obtuse-angulate, the immediate angle very blunt, the sides of the same slightly sinuate; median carina very low and weak, severed by three transverse sulci, the caudal of which is deeper than the others; metazona about two-thirds the length of the prozona, lateral angles broadly rounded except for a slight shoulder on the metazona; lateral lobes longer than deep, ventral margin obtuse-angulate, sinuate cephalad. Tegmina exceeding the apex of the abdomen in



FIG. 31.—
JODACRIS
FURCILLA-
TA. DOR-
SAL OUT-
LINE OF
APEX OF
MALE AB-
DOMEN.
(X 5)

both sexes, in the male by the length of the pronotum, in the female by hardly more than that of the metazona, rather narrow, subequal, apex rounded, costal lobe small, no distinct intercalary vein. Prosternal spine slightly transverse, conic, acute; interspace between the mesosternal lobes slightly longitudinal (male) or subquadrate (female); metasternal lobes subcontiguous in both sexes. Supra-anal plate of the male elongate, somewhat produced, subequal in the proximal three-fifths, arcuate acute-angulate in the remainder, the lateral margins strongly thickened and inflated proximad, a distinct medio-longitudinal sulcus present on the proximal half, this portion

being divided from the distal by a low obtuse-angulate transverse carina, the distal section strongly arcuate in section, bearing mesad a pair of small teat-like nodes; cerci of the male heavy, elongate, reaching to the apex of the subgenital plate, the whole compressed, the proximal half subequal, the remainder tapering from the middle to the tip, which is abruptly bent inward at about three-fifths the length of the cercus, the dorsal margin bearing a short tooth-like process at about the point of flexure, from which to the base the margin is keeled; subgenital plate conic, the apex slightly blunt when seen from the side. Ovipositor jaws of the female very slightly and weakly serrate. Cephalic and median limbs of medium size, the femora of the male slightly inflated. Caudal femora quite robust, the length about one and one-half times that of the head and pronotum together, the greatest width contained about three times in the length of the femur, pagina regularly and closely patterned; caudal tibiæ with seven spines on the external

margin and nine on the internal. General color uniform walnut brown in the male, chocolate in the female, the abdomen cinnamon in both sexes. Caudal femora walnut brown in both sexes, the tibiae pale verdegis green, washed with pale brown proximad and distad, the spines tipped with blackish, tarsi walnut brown. Eyes tawny-olive; antennæ vinaceous-rufous, darker near the tip.

Measurements.

	Male.	Female.
	<i>mm.</i>	<i>mm.</i>
Length of body.....	16.2	20.8
Length of pronotum.....	3.5	3.8
Length of tegmen.....	15	17.2
Length of caudal femur.....	9	10

The types are unique.

Genus *OMALOTETTIX* Bruner.

OMALOTETTIX NEBULOSA (Bruner).

Chapada, Matto Grosso, Brazil. September. (H. H. Smith.)
One female.

This specimen has been compared with material from Sapucay, Paraguay.

OMALOTETTIX SIGNATIPES Bruner.

Chapada, Matto Grosso, Brazil. April. (H. H. Smith.) Two males, two females.

Bonito, Pernambuco, Brazil. January, 1883. (A. Koebele.)
One male, one female.

Espirito-Santo, Brazil. [Hebard collection.] One female.

The individuals from Bonito appear to have the wings proportionately longer and slenderer than is the case with Chapada and Sapucay, Paraguay, material, while they are also distinctly inferior in size. A specimen of this species from the island of St. Thomas, West Indies (December, 1882; A. Koebele), is intermediate in size between the Chapada and Bonito males, but has the tegmina nearly as slender as in the latter.

The range of this species now extends from Temax, Yucatan, and St. Thomas, West Indies, to São Paulo, Brazil, and Sapucay, Paraguay.

Genus *LEPTOMERINTHOPRORA* Rehn.

1905. *Leptomerinthoprora* REHN, Proc. Acad. Nat. Sci. Phila., 1905, p. 436.

Type.—*Leptomerinthoprora brevipennis* Rehn.

The genus *Leptomerinthoprora* is a member of the *Vilernæ* and not of the *Xiphioleæ*, as previously stated by me, its nearest ally being *Nuceria* Stal, from which it differs in the short tegmina and wings,

the strongly rugulose pronotum, the distinctly elevated median carina of the pronotum, and in having seven outer tibial spines instead of eight.

LEPTOMERINTHOPRORA ÆQUALIS, new species.

Type.—Female. Bahia, Brazil. March 21, 1883. (A. Koebele.)
Cat. No. 12094, U.S.N.M.

This new species differs from *Leptomerinthoprora brevipennis* from Pozo Azul, Costa Rica, in the less angulate fastigium, the less sulcate frontal costa, the more compressed pronotum with subparallel lateral angles and obtuse-angulate caudal margin, the longer and less trigonal tegmina, and slenderer ovipositor jaws.

Size medium; form moderately robust, slightly compressed; surface of the pronotum and pleura strongly punctate, the dorsum of the prozona with the punctations weak; head and abdomen sparsely and very shallowly punctate. Head with the exposed dorsal length about three-fifths the dorsal length of the pronotum; occiput moder-

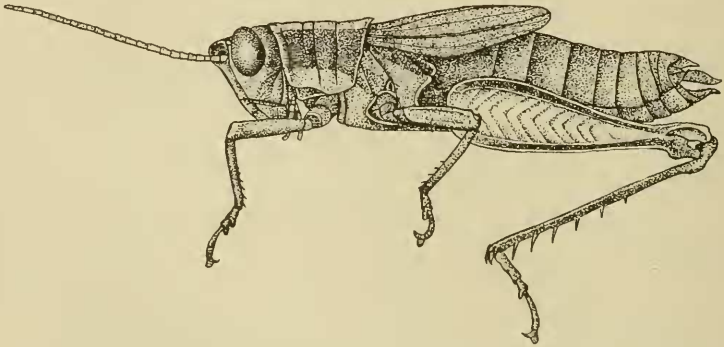


FIG. 32.—LEPTOMERINTHOPRORA ÆQUALIS. LATERAL VIEW OF TYPE. (X 3)

ately arcuate, hardly elevated dorsal of the level of the pronotum, gently declivent in the interocular region to the fastigium, the width of the interocular region two-thirds the greatest fastigial width; fastigium very slightly acute-angulate in shape, the apex rather broadly subtruncate, the length of the fastigium about equal to the width of the interocular space, surface of the fastigium very slightly depressed within the margin; fastigio-facial angle obtuse, the inter-antennal region somewhat produced, the angle of the face distinctly retreating, the inter-antennal portion rounded; frontal costa moderately broad, subequal dorsal, regularly narrowed at its junction with the fastigium, distinctly but not sharply constricted ventrad of the ocellus, very slightly inflated immediately dorsal of the clypeal suture, sulcate from the ocellus ventrad, plane and punctate dorsal; lateral facial carinae prominent, regularly but not greatly divergent ventrad; eyes prominent, subovate in outline, the length about half again that of the infra-ocular portion of the genae; antennae about

equal to the length of the head and pronotum, thick, slightly depressed and subsensiform proximad, apex blunt. Pronotum very slightly more than two-fifths the length of the caudal femur, dorsum nearly plane; cephalic margin arcuato-truncate, with a distinct but slight median emargination, caudal margin broadly obtuse-angulate, the immediate angle truncate and the entire margin crenulato-sinuate; median carina very low, weak on the prozona, lateral angles rounded, a shoulder present on the metazona; lateral lobes decidedly longer than deep, ventral margin sinuato-emarginate cephalad, median and ventro-caudal angles obtuse; transverse sulci three in number, the caudal deeper than the others, the prozona about three-fifths the length of the pronotum. Tegmina coriaceous, reaching about to the middle of the abdomen, lanceolate, the greatest width contained about three times in the length, costal lobe rather long but low. Wings slightly shorter than the tegmina. Prosternal spine erect, conic, slightly blunted at the apex; interspace between the mesosternal lobes subquadrate, slightly narrower than the width of one of the lobes; interspace between the metasternal lobes sub-trigonal, the distance separating the lobes being about half the length of the interspace. Abdomen moderately compressed, carinate dorsad; ovipositor jaws rather long, shallowly dentato-crenulate. Cephalic and median limbs of medium build. Caudal femora slightly less than one and one-half times the length of the head and pronotum together, moderately robust, the greatest width contained slightly more than three times in the length, pagina with a moderately regular but not very close pattern, dorsal carina entire, genicular lobes acute with the immediate apex well rounded; caudal tibiae slightly shorter than the femora, slightly sinuate, armed on the external margin with six to seven spines, on the internal margin with nine spines, no apical spine present on the external margin.

General color vandyke brown, a broad dorsal bar extending from the fastigium over the occiput, whole of the dorsum of the pronotum and all of anal areas of the tegmina ochraceous in color, clouded on the occiput and pronotum with vandyke brown. An irregular infra-antennal transverse bar and a broad bar covering the genæ, ventral portion of the lateral lobes and touching the pleura dull raw sienna. Abdomen raw umber. Eyes raw umber; antennæ dull gallstone yellow, becoming tawny proximad. Caudal femora with the external face clouded with blackish, the ventral portion of the internal face and the ventral face carmine for the greater part of their length; caudal tibiae similar to the ventral face of the femora, pale proximad, spines tipped with black.



FIG. 33.—LEP-
TOMERIN-
THOPFORA
EQUALIS.
DORSAL
OUTLINE OF
HEAD AND
PRONOTUM
OF TYPE.
(X 3)

Measurements.

	mm.
Length of body.....	25.5
Length of pronotum.....	5.5
Length of tegmen.....	9.5
Length of caudal femur.....	8

The type alone has been examined.

Genus MACHÆROPOLES,^a new.

A member of the *Vilernæ*, but not closely allied to any of the other genera of the group. It is immediately separable by its elongate form, produced fastigium, and strongly retreating face. Some of the characters which appear to show relationship to other genera of the group previously mentioned are the form of the antennæ, the structure of the fastigium, the character of the frontal costa and facial carinæ, the tegminal venation and the structure of the limbs.

Body elongate fusiform. Fastigium produced, rostrate; face strongly retreating; frontal costa entire, sulcate, subequal dorsad, inflated ventrad; eyes elliptical to ovate, hardly prominent; antennæ serrate ensiform. Pronotum straight, median carina very slight, transverse sulci weak, no distinct lateral angles present. Tegmina elongate, subequal, exceeding the abdomen, apex rounded, an irregular intercalary vein present. Wings ample. Prosternal spine compressed, retrorse. Meso- and meta-sternal lobes contiguous or subcontiguous. Supra-anal plate of the male armed with numerous small nodes; subgenital plate compressed. Ovipositor jaws of the female slender. Median and cephalic limbs small. Caudal femora moderately robust; caudal tibiæ armed on the external margin with seven spines, on the internal margin with ten, no apical external spine present.

Type.—*Machæropoles rostratus*, new species.

MACHÆROPOLES ROSTRATUS, new species.

Types.—Male and female. Chapada, Matto Grosso, Brazil. August (female), September (male). (H. H. Smith.) Cat. No. 12095, U.S.N.M.

Size medium; form very elongate fusiform, slightly compressed, venter flattened; surface more or less thickly punctate. Head with its dorsal length equal to (male) or slightly shorter than (female) the dorsal length of the pronotum; occiput horizontal; interocular space slightly less (male) or more (female) than half the fastigial width; fastigium slightly ascending, subequal in width proximad, acute-angulate distad, the disk with a slight medio-longitudinal carina distad and a pair of low lateral carina diverging cephalad,

^a Μαχαιροπόλης, signifying a vender of swords.

the lateral and apical margins slightly elevated; fastigio-facial angle slightly rounded rectangular, the apex of the rostrate inter-antennal region obliquely sub-truncate, the facial line arcuato-concave, very strongly retreating; frontal costa narrowed at its junction with the fastigium, slightly constricted some little distance dorsad and ventrad

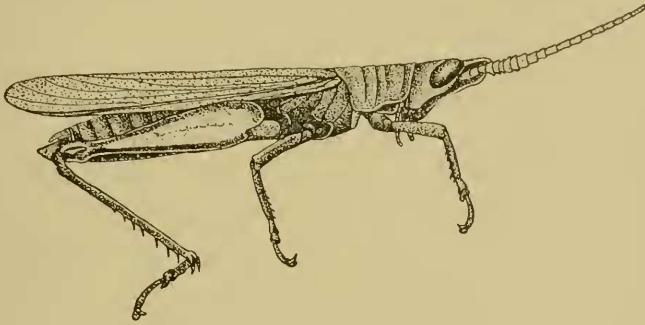


FIG. 34.—MACHEROPELES ROSTRATUS. LATERAL VIEW OF MALE TYPE. (X 3)

of the ocellus, thence slightly arcuato-convex to the clypeal suture, sulcate throughout its length; lateral facial carinae distinct, subparallel dorsad, slightly divergent ventrad; eyes hardly prominent, elliptical (male) or acute subovate (female) in outline, in length very slightly (female) or considerably (male) exceeding the infra-ocular portion of the genae; antennae about twice the dorsal length of the pronotum, very robust in the female, triquetrous, serrate ensiform. Pronotum with its dorsal length slightly less than half that of the caudal femora, dorsum straight cephalo-caudad, slightly arcuate transversely, the metazona slightly deplanate; cephalic margin arcuato-truncate, caudal margin arcuate obtuse-angulate, slightly sinuate; median carina very slight, broken by two sulci the caudal of which is the more apparent; lateral angles well rounded, a slight shoulder present on the metazona; lateral lobes very decidedly longer than deep, ventral margin sinuate emarginate cephalad, cephalic and caudal margin slightly sinuate, but more so in the female than in the male. Tegmina surpassing the apex of the abdomen by several millimeters in both sexes, narrow, subequal, the apex narrowly rounded, costal lobe hardly indicated; intercalary vein irregularly sinuate.

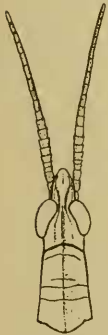


FIG. 35.—MACHEROPELES ROSTRATUS. DORSAL OUTLINE OF HEAD AND PRONOTUM OF MALE TYPE. (X 3)

Prosternal spine considerably compressed, decidedly retrorse, apex moderately acute in the male, rather blunt in the female; interspace between the mesosternal lobes nearly severed in the middle by the sub-attinent lobes in the male, very narrow and hour-glass shaped in the female; metasternal lobes attinent in the male, separated

by an interspace very slightly wider than that between the mesosternal lobes in the female. Abdomen carinate dorsad; terminal dorsal abdominal segment of the male with five small black points on the apical margin; supra-anal plate of the male slightly arcuate in section, the margins deflected dorsad, the shape of the plate acute-angulate, the surface with about nine small blackish nodes arranged in rows which reading caudad are four, two, one, and two; cerci short, rather thick, simple, styliform; subgenital plate moderately produced, compressed, sub-lamellate caudad, the apex when seen from the side blunted acute-angulate; ovipositor jaws slender, margins of dorsal pair blunt dentate-crenulate. Cephalic and median limbs very short, the femora slightly inflated in the male. Caudal femora about five-eighths the length of the tegmina, moderately slender, pagina with a rather close but not very regular pattern; caudal tibiæ somewhat shorter than the femora; caudal tarsi with the proximal joint very appreciably expanded laterad.

General color of the male russet, of the female mummy brown, the latter with the tegmina mottled with wood brown in quadrate patches, the anal area chiefly of the latter color, while the median region is chiefly mummy brown. Eyes raw umber. Tegmina and caudal femora of the female inclined toward fawn, the cephalic and median limbs and caudal femora of the female blotched much as on the tegmina, but the darker color is nearer seal brown; internal face of the caudal femora orange vermilion crossed by four bands of black—one apical, one preapical, one premedian, one proximal. Caudal tibiæ scarlet vermilion on half their length in the female, two-thirds of their length in the male, the proximal remainder similar to the femora in both sexes; spines with their apical halves black.

Measurements.

	Male.	Female.
	<i>mm.</i>	<i>mm.</i>
Length of body.....	23.5	31.5
Length of pronotum.....	4.2	5.8
Length of tegmen.....	17	23
Length of caudal femur.....	10.2	13

A series of one male and three female topotypic specimens have been examined, all taken in June. In size the females are all smaller than the type of that sex, but no striking structural variations are apparent. All of the topotypic specimens agree with the male type in color, a few, however, showing traces of the mottled tegminal pattern.

Genus HOMALOSAPARUS Rehn.

1908. *Homalosaparus* REHN, Proc. Acad. Nat. Sci. Phila., 1908, p. 17.

Type.—*Homalosaparus canonicus* Rehn.

HOMALOSAPARUS SORDIDATUS, new species.

Types.—Male and female. Chapada, Matto Grosso, Brazil. June. (H. H. Smith.) Cat. No. 12096, U. S. N. M.

Closely allied to *Homalosaparus canonicus* from São Paulo, Brazil, but differing in the broader, blunter fastigium, slightly narrower eye, and the longer, more compressed pronotum which has the caudal margin more distinctly rectangulate.

Size rather large; form distinctly but not very greatly compressed; surface of the face, pronotum, and pleura punctate, dorsum of the head somewhat rugulose. Head with its dorsal length about two-thirds that of the pronotum; occiput slightly ascending to the vertex, which is interocular and equal to about three-fourths of the extreme fastigial width; fastigium subhorizontal (female) or slightly declivent (male) when seen from the side, rectangulate (male) or slightly obtuse-angulate (female) in shape, the apex slightly (male) or considerably (female) blunted, the sides of the angle slightly arcuato-concave in the male, the margins slightly elevated in the same sex,

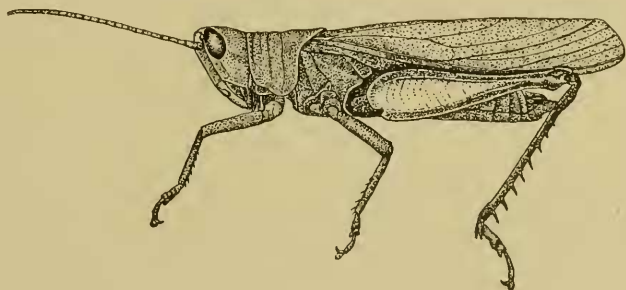


FIG. 36.—HOMALOSAPARUS SORDIDATUS. LATERAL VIEW OF MALE TYPE. ($\times 1\frac{1}{2}$)

surface with a slight medio-longitudinal sulcus, not impressed in the female; lateral foveolæ impresso-punctate, arcuate elongate trigonal in the male, broader and less impressed in the female; fastigio-facial angle rounded rectangulate, the angle of the face considerably retreating from between the antennæ ventrad; frontal costa rather narrow, considerably (male) or hardly (female) compressed dorsad, subequal ventrad, becoming obsolete some distance dorsad of the clypeal suture, punctate dorsad of the ocelli, sulcate ventrad; lateral facial carinæ strongly and regularly divergent; eyes not prominent, elongate acute-ovate in shape, the length about equal to (female) or slightly more (male) than that of the infra-ocular portion of the genæ; antennæ slightly longer (male) or very slightly shorter (female) than that of the head and pronotum together, somewhat depressed proximad, subensiform, apex subacute. Pronotum with the dorsum horizontal, very slightly arcuate in section; cephalic margin subtruncate, caudal margin rectangulate in the male, obtuse-angulate in

the female; median carina very low, slightly irregular, subobsolete between the sulci, lateral angles not marked, a moderate shoulder present on the metazona; transverse sulci three in number, the caudal one the deeper, the metazona very slightly longer than the prozona; lateral lobes about as deep as long, ventral margin well emarginate cephalad, arcuate caudad, the ventro-caudal angle rounded obtuse-angulate. Tegmina elongate, exceeding the apex of the abdomen by about the length of the pronotum, broad, the greatest width contained about four and one-half times in the tegminal length, this greatest width being in the proximal third; costal lobe moderately prominent, the costal margin well arcuate in the proximal fourth, apex considerably oblique truncate, the extreme angle blunt rectangular. Wings reaching very nearly to the apex of the tegmina. Prosternal spine rather slender, acute, slightly retrorse; interspace



FIG. 37.—*Homal-
osaparus
sordidatus*.
DORSAL OUT-
LINE OF HEAD
AND PRONO-
TUM OF MALE.
($\times 1\frac{1}{2}$)

between the mesosternal lobes distinctly longitudinal, rather sharply (male) or slightly (female) narrowed cephalad of the middle; mesosternal lobes subcontiguous (male) or separated by a subquadrate interspace (female). Abdomen slightly carinate, moderately compressed; supra-anal plate of the male produced trigonal, the middle of the sides with a small triangular projection which is excavate dorsad, an angulate impression with its apex cephalad extends across the plate from one of these projections to the other, the distal portion of the plate slightly compressed, the apex rounded; cerci of the male not quite reaching to the apex of the supra-anal plate, simple, substyliform, the proximal three-fifths subequal in width; subgenital plate of the male strongly compressed from about the tips of the cerci, produced, the margins arcuate when seen from the side, apex acute; dorsal ovipositor jaws of the female with the margins unarmed. Cephalic and median limbs rather slender, of median length. Caudal femora slightly exceeding (male) or equalling (female) the apex of the abdomen, well inflated proximad, the greatest width contained three and three-quarter times in the length, medio-dorsal carina serrate, pattern of the pagina regular and moderately close; caudal tibiae distinctly shorter than the femora, somewhat sinuate, the external margin armed with nine spines, the external apical spine present, the internal margin with ten spines.

General colors isabelline, wood brown, and russet, mottled and clouded one on the other, the only marked color pattern being on the male, this consisting of small spots of prout's brown on the dorsum of the pronotum and two quadrate spots of the same color on the proximal two-fifths of the dorsal face of the caudal femora. Caudal tibiae ochraceous, the spines tipped with black. The tegmina have a number of subobsolete oblique linear clouds of prout's brown crossing their median and discoidal areas.

Measurements.

	Male.	Female.
	<i>mm.</i>	<i>mm.</i>
Length of body.....	31	39
Length of pronotum.....	6.5	7.8
Length of tegmen.....	26.8	34
Length of caudal femur...	17	20

A paratypic series of one male and two females taken in June and November have also been examined. In color there is a fair amount of variation, one male and one female being quite reddish, while the other female is vandyke brown in general tone, livened on the sides with olive.

Genus XIPHIOLA Bolivar.

XIPHIOLA BORELLII Giglio-Tos.

Chapada, Matto Grosso, Brazil. April, June, and August. (H. H. Smith.) Three males, two females.

This species is now known to range over the country adjacent to the Paraguay River from Sapucay, Paraguay, north to Chapada.

Genus SCHISTOCERCA Stål.

SCHISTOCERCA DESILIENS Scudder.

1899. *Schistocerca desiliens* SCUDDER, Proc. Amer. Acad. Arts and Sci., XXXIV, p. 455. [Rio de Janeiro and Victoria, Brazil.]

Bahia, Brazil. March 21, 1883. (A. Koebele.) One male.

Bonito, Pernambuco, Brazil. January, February, and July, 1883. (A. Koebele.) Two males, five females.

Pernambuco, Pernambuco, Brazil. January 4, 1883. (A. Koebele.) One female.

Several of the specimens here recorded from Bonito are labeled as having been "collected on cotton."

This species appears to connect the *pyramidata-zapoteca* type with the *flavofasciata-infumata* series, though it seems quite probable that *desiliens* is nothing but a geographic race or form of *flavo-fasciata*. Bruner has observed this species at Asuncion, Paraguay.

SCHISTOCERCA FLAVOFASCIATA (De Geer).

1773. *Acrydium flavo-fasciatum* DE GEER, Mém. Hist. Ins., III, p. 489, pl. XL, fig. 8. [Surinam.^a]

^a From the locality it would seem there exists a strong possibility that this name was originally based on the form to which Scudder gave the name *xqualis*. Nothing diagnostic enough to settle the matter is contained in the original De Geerian description, and without Surinam material we would hardly be justified in stating that specimens from that locality are identical with Demerara individuals, which were the basis of *xqualis*, although the probability is of course very great. The statement made by Scudder (Proc. Acad. Arts and Sci., XXXIV, p. 456) that the species was originally described from Brazil was probably due to Stål's use of Brazil as the habitat of the species (Recensio Orthopterorum, I, p. 67). De Geer, however, distinctly gives Surinam as the source.

Rio de Janeiro, Brazil. November and December. (H. H. Smith.) One male, four females.

One of the female specimens shows a tendency toward *Schistocerca desiliens* in the maculation of the tegmina and the blackish maculation of the lateral lobes of the pronotum. As a whole, however, it appears to be nearer *S. flavofasciata*.

SCHISTOCERCA PALLENS (Thunberg).

1815. *G[ryllus] pallens* THUNBERG, Mém. Acad. Imp. Sci. St. Pétersbourg, V, p. 237. [No locality cited.]

Chapada, Matto Grosso, Brazil. July, September. (H. H. Smith.) One male, one female.

Previous records of *S. americana* from Guadalajara and Cuernavaca, Mexico, by the author^a, are in part this species, as a re-examination of the material shows.

Genus **PARADICHRPLUS** Brunner.

1893. *Paradichroplus* BRUNNER, Ann. Mus. Civ. Stor. Nat. Genova, XXXIII, p. 145.

Based on Division II of the genus *Pezotettix* of Stål.^b The two included species are both members of *Paradichroplus* as now understood, and the first, *mexicanus* Brunner, can be considered the type.

PARADICHRPLUS FUSIFORMIS Giglio-Tos.

1897. *P[aradichroplus] fusiformis* GIGLIO-TOS, Boll. Mus. Zool. Anat. Comp. Torino, XII, n. 302, p. 35. [San Lorenzo, Jujuy, Argentina; San Francisco, Bolivian Chaco.]

Chapada, Matto Grosso, Brazil. April. (H. H. Smith.) Five females.

One of the specimens studied is appreciably smaller than the others, but exhibits no other differences worthy of note.

This species has been found at Urucum and Carandasinho, near Corumbá, Brazil, and Asuncion, Paraguay, in addition to the localities cited above.

PARADICHRPLUS BIPUNCTATUS Giglio-Tos.

1894. *P[aradichroplus] bipunctatus* GIGLIO-TOS, Boll. Mus. Zool. Anat. Comp. Torino, IX, n. 184, p. 26. [Province of San Pedro and Asuncion, Paraguay.]

Corumbá, Matto Grosso, Brazil. March; highland. (H. H. Smith.) Four females.

One of these specimens measures as follows:

	mm.
Length of body	16.7
Length of pronotum	3.4
Greatest caudal width of pronotum	3.3
Length of tegmen	3
Length of caudal femur	10.2

^a Trans. Amer. Ent. Soc., XXVII, p. 228; Proc. Acad. Nat. Sci. Phila., 1904, p. 534.

^b Bih. till k. Svenska Vet.-Akad. Handl., V, no. 9, p. 8.

The species is now known to range from Corumbá to Formosa territory, Argentina, and from central Paraguay to San Lorenzo, Jujuy, Argentina.

Genus *DICHOPLUS* Stål.

DICHOPLUS PUNCTULATUS (Thunberg).

Bonito, Pernambuco, Brazil. January, 1883. (A. Koebele; one collected on cotton.) Two females.

Espirito Santo, Brazil. [Hebard collection.] One female.

Chapada, Matto Grosso, Brazil. April. (H. H. Smith.) Three males, two females.

DICHOPLUS BRASILIENSIS Bruner.

Rio de Janeiro, Brazil. November. (H. H. Smith.) One female.

Genus *LEIOTETTIX* Bruner.

LEIOTETTIX VIRIDIS Bruner.

Chapada, Matto Grosso, Brazil. (H. H. Smith.) One female.

This specimen is not separable from topotypic females from Sapucay, Paraguay.

Genus *PARASCOPAS* Bruner.

PARASCOPAS OBESUS (Giglio-Tos.).

Corumbá, Matto Grosso, Brazil. March; highland (2). (H. H. Smith.) One male, two females.

One of the female specimens is slightly smaller than the other, which latter represents the normal size when compared with females from Sapucay, Paraguay. The two specimens measure as follows:

	Male.	Female.
	<i>mm.</i>	<i>mm.</i>
Length of body.....	25.1	^a 33
Length of pronotum.....	6.1	6.6
Greatest caudal width of disk of pronotum...	4.6	4.8
Length of tegmen.....	3.7	5
Length of caudal femur.....	16.7	17.1

^a Abdomen unnaturally distended.

The range of this species is now known to extend from Corumbá to Asuncion and Sapucay, Paraguay.

PARASCOPAS CHAPADENSIS, new species.

Types.—Male and female. Chapada, Matto Grosso, Brazil. April. (H. H. Smith.) Cat. No. 12097, U.S.N.M.

Closely allied to *P. obesus*, but differing in the sigmoid cerci, the more prominent furcula and more elongate supra-anal plate of the male, the slightly broader tegmina, and the absence of sanguineous from the ventral aspect of the caudal femora.

Size medium. Head with its dorsal length about three-fourths (male) to four-fifths (female) that of the pronotum; occiput considerably inflated, arcuate, the vertex and fastigium strongly (female) or very considerably (male) declivent; interocular space half as wide as (male) or half again as wide as (female) the proximal antennal joint, narrowly sulcate in the male, moderately excavate in the female; fastigium short, much broader than long, the apical margin

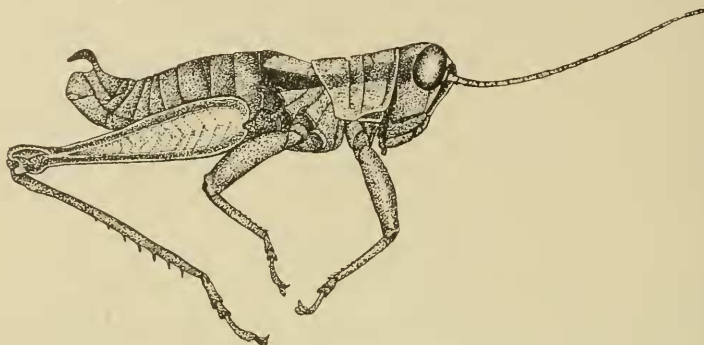


FIG. 38.—*PARASCOPAS CHAPADENSIS*. LATERAL VIEW OF MALE TYPE. ($\times 3$)

truncate, the lateral margins slightly arcuato-concave, the surface considerably (male) or shallowly (female) excavate; fastigio-facial angle rounded broad obtuse-angulate, face considerably retreating, slightly arcuate, the interantennal region slightly produced in the male; frontal costa moderately broad, subequal, very slightly constricted immediately ventrad of the ocellus, about reaching the clypeal suture in the male, subobsolete a short distance dorsad of it

in the female, surface plane dorsad and slightly sulcate ventrad of the ocellus in the female, moderately sulcate ventrad and a distance dorsad of the ocellus in the male, the dorsal third biseriata punctate in the same sex; lateral facial carinae prominent, divergent; eyes prominent, particularly in the male, subovate (female) or short ovate (male) in outline, distinctly longer than the infra-ocular portion of the genae in both sexes; antennae filiform, elongate, in length less than half (female) or four-fifths (male) that of the body. Pronotum very lightly sellate, distinctly arcuate in transverse section; cephalic margin subarcuate with a very shallow median emargination,



FIG. 39.—*PARASCOPAS CHAPADENSIS*. DORSAL VIEW OF APEX OF MALE ABDOMEN. ($\times 6$)

caudal margin very slightly arcuate (male) or arcuato-truncate (female), lateral angles rounded, no appreciable shoulders present; median carina very weak and low, more apparent on the metazona than elsewhere; transverse sulci three in number, metazona about half the length of the prozona; lateral lobes distinctly longer than deep, ven-

tral margin arcuate-emarginate cephalad, the median angle rounded obtuse, ventro-caudal angle obtuse-angulate, the caudal margin arcuate-emarginate. Tegmina two-thirds (male) to four-fifths (female) the length of the pronotum, reaching to (male) or very slightly exceeding (female) the cephalic margin of the metanotum, subovate, the greatest width contained one and one-half times in the length, the apex very broadly and bluntly rounded in both sexes, broader, however, in the female. Wings minute. Prosternal process very low, blunt, slightly more prominent in the male than in the female; interspace between the mesosternal lobes narrow and decidedly longitudinal in the male, broader and subquadrate in the female; metasternal lobes subcontiguous in the male, in the female separated by a subtrigonal interspace which is decidedly narrowed caudad, the narrowest space separating them being slightly less than half the greatest. Abdomen slightly keeled dorsad; furcula of the male prominent, spiniform, subparallel, as long as the segment from which they arise; supra-anal plate of the male subtrigonal, the margins considerably arcuate-emarginate at the base of the cerci and slightly the same before the apex which is blunted acute-angulate, a broad shallow median depression present on the proximal three-fourths, margins considerably reflexed and distinctly elevated mesad, the elevated portion covered with small excrescences; cerci of the male rather slender, elongate, reaching to about the apex of the subgenital plate, sigmoid, elevated, the whole cercus compressed, more distinctly so mesad and distad, proximal third tapering, rather narrow mesad, the distal third, which is parallel to the axis of the body, slightly lamellate, apex moderately acute, the whole cercus regularly and gently curved toward the middle line to the proximal third which is slightly arcuate divergent; subgenital plate of the male inflated, recurved, the apex very close to the apex of the supra-anal plate and very blunt and low, the outline of the plate when seen from the side is moderately arcuate; ovipositor jaws of the female rather straight, the dorsal subequal proximad and mesad, the distal portion rather sharply hooked. Cephalic and median limbs moderately long, the femora very considerably inflated in the male. Caudal femora exceeding the apex of the abdomen in both sexes, of medium build, tapering, the greatest width contained about four times in the length, pattern of the pagina regular, genicular lobes with their apices rectangulate in the female, somewhat arcuate rectangulate in the male; caudal tibiæ slightly shorter than the femora, external margin armed with seven spines, internal with ten spines.

General color olive-green on the dorsum of the head, pronotum and abdomen, becoming saffron yellow ventrad and on the sides of the abdomen. Head with the face oil green in the male, dark olive-green in the female, the genæ much the same but slightly paler in

both sexes; a broad postocular bar of blackish brown extends from the caudal margin of the eye over the dorsal half of the lateral lobes, touching the dorsal portion of the exposed pleura and covering the costal half of the tegmina; eyes russet in the male, mars brown in the female; antennæ canary yellow proximad, suffused with dull brown distad in the male, in the female ochraceous, slightly darkened distad. Ventral portion of the lateral lobes very dull olive-yellow in the male, slightly buffy in the female. Sutural half of the tegmina paris green. The two proximal abdominal segments are clouded with blackish in continuation of the dark coloration of the tegmina; dorsum of the two apical abdominal segments, furcula, a broad margin to the supra-anal plate, the margin of the subgenital plate except the apex and the distal half of the cerci blackish brown. Limbs apple green, the caudal femora slightly yellowish proximad and ventrad, the distal extremity blackish, the dorsal face and pregenicular region oil green; caudal tibiæ bottle green, blackish proximad and distad, the spines almost entirely black.

Measurements.

	Male.	Female.
	<i>mm.</i>	<i>mm.</i>
Length of body.....	19	22.5
Length of pronotum.....	4.3	4.5
Length of tegmen.....	3.2	3.6
Length of caudal femur.....	12.6	13.1

The typical pair are the only specimens of the species in the collection.

Genus OSMILIA Stål.

OSMILIA FLAVO-LINEATA (De Geer).

Pernambuco, Brazil. January 4, 1883. (A. Koebele.) One female.

OSMILIA VIOLACEA (Thunberg).

Rio de Janeiro, Brazil. November. (H. H. Smith.) One male, three females.

Chapada, Matto Grosso, Brazil. April. (H. H. Smith.) One male.

Genus POLYCHITONACRIS,^a new name.

1859. *Polysarcus* SAUSSURE, Revue et Magasin de Zoologie, 2me ser., XI, p. 392.
(Not *Polysarcus* Fieber, Lotos, III, p. 175, 1853.)

Type.—*Polysarcus atavus* Saussure.

^a Πολυχιτων, signifying wearing many tunics; ακρις, signifying grasshopper.

POLYCHITONACRIS ATAVA (Saussure).

1859. *P[olysarcus] atavus* SAUSSURE, Revue et Magasin de Zoologie, 2me ser., XI, p. 393. [Bahia, Brazil.]

Minas Geraës, Brazil. [Hebard collection.] One female.

Rio de Janeiro Brazil. November. (H. H. Smith.) Two females.

The Minas Geraës specimen is somewhat smaller than the Rio de Janeiro individuals, and has the second pronotal lobe not quite as distinctly separated from the third or the spine at the apex of the caudal femora as long. The size of all the individuals is greater than the original measurement given by Saussure ("Long., 0.022"), but otherwise they do not appear separable from true *atava*.

The measurements are as follows:

	Minas Geraës.	Rio de Janeiro.	
	<i>mm.</i>	<i>mm.</i>	<i>mm.</i>
Length of body (including ovipositor jaws)	27	29.8	34.7
Length of pronotum	8	8.1	8
Greatest width of dorsum of pronotum	7.8	8.6	8.3
Length of caudal femur	17	19	18.2